SKEENA

BULKLEY

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Buck Creek Juvenile Salmon Trapping Program Project Number F1528-0-1702

Field work conducted by

Community Futures Development Corporation of Nadina
Houston, B.C.

Report prepared by

SKR Consultants Ltd.
Smithers, B.C.

for

Department of Fisheries and Oceans
Smithers, B.C.

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Executive Summary

Juvenile coho, chinook, and rainbow trout/steelhead were sampled for the second consecutive year in Buck Creek using a rotary screw trap. The rotary screw trap was sampled nightly from May 21st to June 28th 1999, except from May 25th to May 29th and June 11th to June 12th, 2000. Data on discharge, water temperature, and trap performance were collected throughout the study. Fish captured were identified to species. Fork length and weight were recorded for all fish captured except lamprey, and scale samples were collected for a sub-sample of coho and rainbow trout/steelhead.

Fish captured during the study included 2,428 coho (*Oncorhynchus kisutch*), 120 chinook (*O. tsawytscha*), 426 rainbow trout/steelhead (*O. mykiss*), one cutthroat trout (*O. clarki*), 11 white sucker (*Catostomus commersoni*), 13 longnose dace (*Rhinichthys cataractae*) and 607 lamprey (*Lampetra sp.*). Trap efficiency was tested three times during the study, and is estimated to range between 10.1 and 17.5%. Trap performance was best at moderate flows. Low discharge decreased trap efficiency since the drum was not able to rotate effectively. High discharge and resultant debris accumulation in the trap also caused decreased trap efficiency.

The total number of coho were estimated using Petersen estimates. Petersen estimates were calculated by using the number of recaptures from known numbers of marked hatchery released on May 3rd 2000 upstream of the rotary screw trap location. Two marked groups of hatchery coho, 16,000 adipose and right maxillary clipped and 2,400 right ventral clipped, were released upstream of the rotary screw trap on May 3rd 2000. The estimated number of coho smolts moving past the rotary screw trap location is between 47,997 and 55,282 based on Petersen estimates. This number includes all hatchery released (August 1999 and May 2000) as well as wild coho. Production of wild coho in Buck Creek upstream of the first bridge is low, as indicated by the low catch of wild coho which had smolted and were moving past the rotary screw trap in both years of the study (4 wild coho in 1999, 9 wild coho in 2000).

The number of adipose clipped coho initially released on August 24th 1999 (80,440) moving past the rotary screw trap was also calculated using Petersen estimates. Between 30,667 and 35,322 adipose clipped coho were estimated to have moved past the rotary screw trap location based on the known numbers of hatchery fish released on May 3rd 2000. Using trap efficiencies estimated during the project, the estimated number of adipose clipped coho moving downstream past the rotary screw trap between May 21st and June 28th is much lower (8,862.9 and 15,356.4). This is probably due to the lack of data prior to May 21st 2000, and the apparent earlier peak in downstream migration of hatchery fish released in the spring (age 1+), than the hatchery fish that were released at age 0+ in the previous August or wild fish.

Coho fork length and weight differed between different mark groups captured in the rotary screw trap in 2000, between wild coho captured in the two years of the study, and between wild and adipose clipped fish captured during an overwinter study and the current study. Coho, chinook and rainbow trout/steelhead captured in the rotary screw trap in 1999 were longer and heavier than those captured in May and June 2000.

Recommendations on improvements of the study, and suggestions for related studies are provided in the report.

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Acknowledgments

The Buck Creek juvenile salmon trapping program was funded by the Department of Fisheries and Oceans. The scientific authority for the study was Brenda Donas (Department of Fisheries and Oceans). Tracy and Jim De la Mare conducted all field work, under the supervision of Greg Tamblyn (Community Futures Development Corporation of Nadina) and Brenda Donas (Department of Fisheries and Oceans). Jim and Tracy De la Mare were invaluable during the field program. Their enthusiasm for the project, despite many consecutive long days, is much appreciated. Jim and Tracy's ability to improvise the rotary screw trap was indispensable during the project. All data was entered by Brenda Donas (Department of Fisheries and Oceans). Regina Saimoto conducted data analysis, and summarized data gathered during the study. Figure 1 of the report was provided by Community Futures Development Corporation of Nadina. Other figures were prepared by Regina Saimoto and Shawna Hartman (SKR Consultants Ltd.). Greg Tamblyn, Brenda Donas and Ron Saimoto provided helpful editorial comments on the report.

1.0 Introduction

The Community Futures Development Corporation of Nadina (CFDCN) was contracted by Brenda Donas (Community Advisor, Department of Fisheries and Oceans) to operate a rotary screw trap on Buck Creek in May and June, 2000. A rotary screw trap was operated at the same location in the previous year (Mackay 1999). SKR Consultants Ltd. was contracted by CFDCN to summarize and analyse data collected during the operation of the rotary screw trap.

The Buck Creek salmon trapping project had the following objectives:

- to install a rotary screw trap on Buck Creek (Buck Flats area) at a similar location to that used in 1999;
- to evaluate the use of the trap at the location;
- to estimate trap efficiency (subjectively and objectively);
- to estimate the number of coho migrating out of Buck Creek (including wild and hatchery origin fish);
- to collect biological samples from species captured in the rotary screw trap;
- to monitor the Buck Creek release pond for predation; and
- to summarize collected data in a formal report, to compare data to the data gathered in the previous year where possible, and to provide recommendations for future years of the project.

There are tentative plans to continue the operation of a rotary screw trap in late summer/early fall at the same location in Buck Creek to determine the proportion of fry released in the summer that migrate downstream prior to winter.

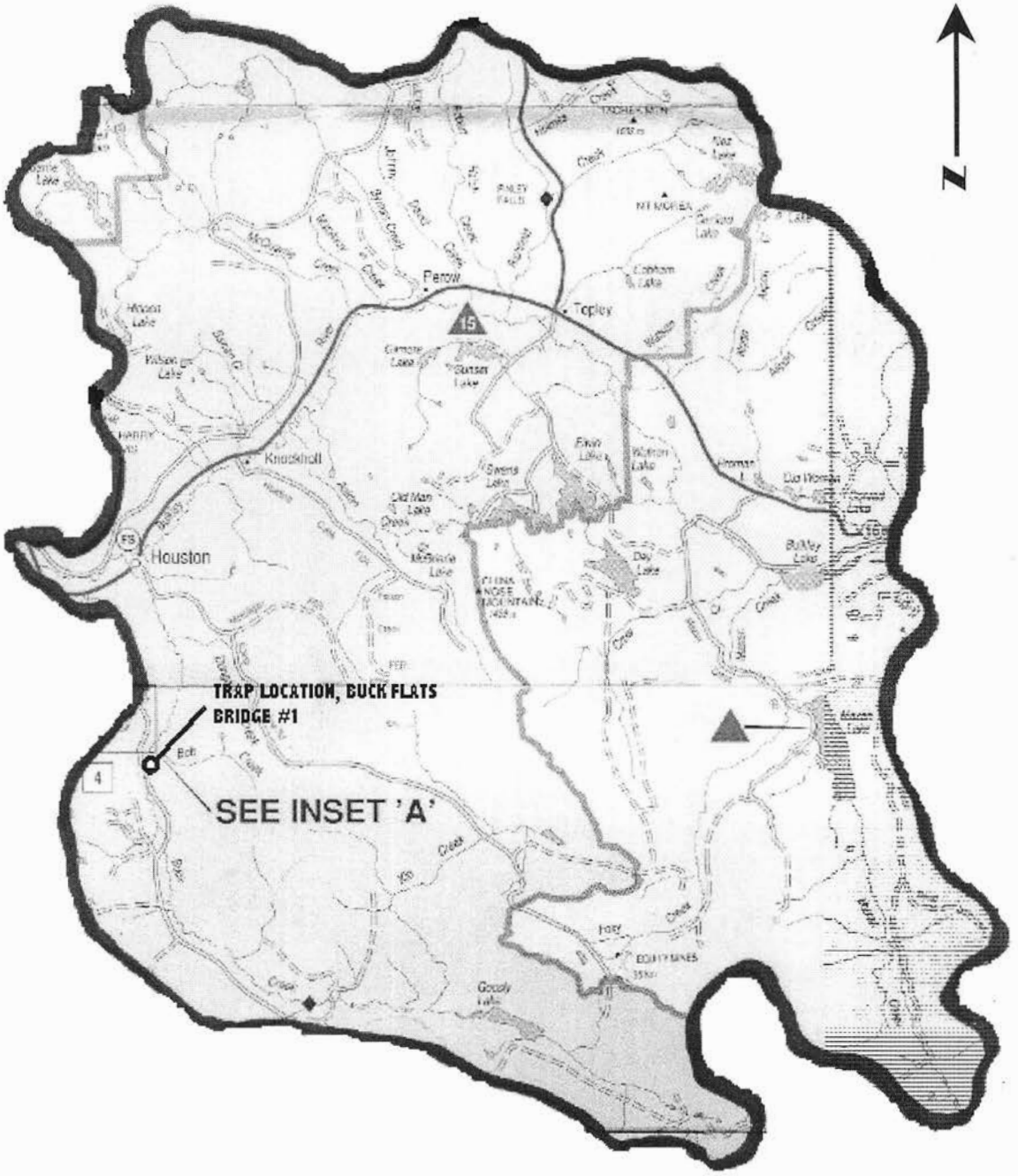

Figure 1: Upper Bulkley River watershed with rotary screw trap location on Buck Creek. Map not to scale (adapted from MacKay 1999).

2.0 Materials and Methods

2.1 Study Area

Buck Creek, a 5th order stream (1:50,000 scale), drains into the upper Bulkley River at Houston, in north central British Columbia (Figure 1). Buck Creek drains an area of approximately 580 km^2 (about 25% of the upper Bulkley watershed area) over a distance of 55.6 km. A lack of glacial influence, a predominance of low gradient reaches, and a low proportion of lakes generally characterize the system. Buck Creek is thought to potentially be one of the most productive salmonid nursery streams in the upper Bulkley system (BCCF 1997). Anadromous species, including pink salmon (*Oncorhynchus gorbusha*), chinook salmon (*O. tsawytscha*), coho salmon (*O. kisutch*), pacific lamprey (*Lampetra tridentata*), and steelhead (*O. mykiss*) are known to utilize the lower reaches of Buck Creek, but upstream migration of anadromous fish is blocked by a waterfall in reach 8 of the system (35.7 km upstream of the Bulkley River, BCCF 1997). In addition, a cascade in reach 3 of Buck Creek likely blocks fish passage for some species (e.g. pink salmon), and most species may be prevented from navigating past the cascade at some flows (BCCF 1997, 1998). Non-anadromous species documented present in Buck Creek and/or its tributaries include bull trout/Dolly Varden (*Salvelinus confluentus* and/or *Salvelinus malma*), rainbow trout (*O. mykiss*), rocky mountain whitefish (*Prosopium williamsoni*), longnose dace (*Rhinichthys cataractae*), largescale suckers (*Catatsomus macrocheilus*), white suckers (*Catastomus commersoni*), and longnose suckers (*Catastomus catastomus*) (BCCF 1997, 1998). River lamprey (*L. ayresi*) were captured in the rotary screw trap operated in 1999 (Mackay 1999), and one cutthroat trout (*O. clarki*) was reported present in our study.

Buck Creek coho stocks have been enhanced in 1999 and 2000 by releases of juvenile coho into the system. The number of coho released into the system upstream of the rotary screw trap location is summarized in Table 1. An additional 23,485 coho (1998 brood, ~12-14g, 20,485 coded wire tag, adipose fin clipped and right maxillary clipped, and 3000 right ventral clipped) were released in the earthen pond downstream of the rotary screw trap location between May 4th and 9th 2000 (O'Neil pers. comm., Tamblyn pers.comm.). Future releases of juvenile coho are planned for the year 2000. All coho were reared at Toboggan Creek fish hatchery prior to release into Buck Creek.

Table 1. Summary of coho released into Buck Creek upstream of the rotary screw trap location.

Date released	Number released	Size at release	Mark	Reference
August 24, 1999	80,440	~4.2 g / fish	CWT, adipose	O'Neil pers. com.
May 3, 2000	16,000	~12-14 g/fish	CWT, adipose, right maxillary	O'Neil pers. com.
~May 3, 2000	2,400	~12-14 g/fish	right ventral	O'Neil pers. com.

2.2 Rotary Screw Trap Location

An eight foot rotary screw trap was installed at the first bridge on Buck Creek on May 4th 2000 (Donas pers. comm.) (Figure 1). The rotary screw trap was installed at the same site used in 1999. Mackay (1999) described the physical location of the trap as a deep glide/pool complex (Figure 2) beneath and downstream of the first bridge crossing on the Buck Flats Road (UTM 9.653200-6019400). This site is located approximately 26 km downstream of the impassable falls in reach 8 of Buck Creek. Bankful width at the site was 7-8 meters in 1999 (Mackay 1999). The rotary screw trap was positioned using tether cables, which allowed for some movement of the trap upstream and downstream as well as laterally in the channel.

Figure 2. Rotary screw trap used at Buck Creek in May and June 2000.

2.3 Rotary Screw Trap Operation

Although the rotary screw trap was installed on May 4th 2000, it was not fished effectively until May 21st 2000. Low water levels and the large size of the trap in relation to creek size caused the drum to catch on the creek bottom, rendering it unfishable in water levels less than 70 cm (staff gauge readings). Staff gauge readings were found to exceed 70 cm on six of the 30 days for which staff gauge readings were available, indicating that the trap was not fishable for most of the study unless modifications were made. An inclined plane trap (2' by 3') was fished just downstream of the rotary screw trap location from May 21st to May 24th, during low water levels. However, the inclined plane trap clogged with debris within minutes of being set, and appeared to be unsuitable for the Buck Creek system. The rotary screw trap was modified by placing wooden blocks under the boom on the drum of the trap so the drum could rotate freely. Since the drum was raised, a new gasket for the cone of the drum (connecting to the live box) was installed. The rotary screw trap was not equipped with an emergency brake. A chain and hook was installed to stop the rotation of the drum in case of an emergency. Modifications of the trap and removal of several large rocks on the creek bottom enabled the trap to operate at staff gauge levels of 35 cm.

The rotary screw trap was operated effectively from May 21st until June 28th 2000 by lowering the screw into the water column. The trap was fished nightly from May 21st to June 28th, but was not set from May 24th to May 29th 2000, or on June 11th to June 12th. During this time, water levels were too high or too low for the trap to fish effectively. The rotary screw trap was set at dusk (around 8:00 pm) until dawn (about 8:30 am) for an average duration of 12.5 hours (range 12 to 13 hours). The trap was checked every four hours while it was fishing. Debris was removed from the trap at dusk, during each trap check, and at dawn. At each trap setting, water temperature (alcohol thermometer) and water level (at existing staff gauge) was recorded. Water level was converted to discharge using a discharge rating curve previously calculated for the staff gauge (AGRA 2000). The formula used to convert staff gauge readings to discharge is given in equation 1, and has a coefficient of determination of $R^2 = 0.9971$.

Equation 1: $$D = 0.0563\ h\ -\ 2E^{-5}$$

where: D = discharge
h = staff gauge reading

2.4 Trap efficiency

Trap efficiency was evaluated by conducting three separate mark-recaptured experiments. On three separate occasions (June 6, June 9 and June 15) a sub-sample of coho captured in the rotary screw trap was marked (top caudal clip or bottom caudal clip) and released upstream of the rotary screw trap. The number of fish re-captured was recorded during subsequent sampling events. The proportion of re-captured fish was used to estimate trapping efficiency for the rotary screw trap (equation 2). This estimate of capture efficiency assumes that all marked coho moved downstream of the trap during the sampling period.

Equation 2: capture efficiency = R/M (100%)

where: R = number of recaptured coho
M = number of marked coho released upstream of trap

2.5 Fish sampling

All fish captured were anaesthetized using Alka Seltzer and baking soda. All fish captured were identified to species. Juvenile coho were inspected for marks (adipose fin clip, right maxillary clip, right ventral clip, top or bottom caudal clip). Fork length (mm) and weight (grams) data were collected for up to 200 fish of each species, except lamprey. Fish were dipnetted from the live box into a bucket. All fish in the bucket were measured, even if the required sample size was exceeded to promote a random size/age sample of fish. Scale samples of approximately five individual coho marked with a coded wire tag and adipose fin clip in different size categories (5 mm groups) were also taken. Since age information was not available at the time of writing, fork length frequency distributions were used to group fish in approximate age categories.

Length and weight data were used to calculate Fulton's condition factor. Fulton's condition factor (equation 3) is useful where growth is isometric, and/or if the fish to be compared are of approximately the same length (Ricker 1975, Bagenal 1978).

Equation 3: $K = 10^5 (w / l^3)$

where: K = Fulton's condition factor
w = weight (g)
l = fork length (mm)

Scale samples were also collected for a sub-sample of rainbow trout/steelhead. Samples were submitted to B.C. Environment (Smithers office) for analysis. A sub-sample of approximately 60 lamprey ammocoetes were collected and preserved in ethanol for submission to Margaret Docker at UNBC.

2.6 Estimating Fish Abundance

Population size was estimated for coho smolts upstream of the rotary screw trap location in May and June 2000. An adjusted Petersen estimate (Ricker 1975) was used to calculate population estimates (Equation 4). This method is relatively unbiased (Ricker 1975, Bagenal 1978).

Equation 4: $N^* = (M+1)(C+1) / (R+1)$

where: N* = adjusted Petersen estimate
M = number of marked fish
C = catch of sample taken for census
R = number of recaptured marked in the sample

The two groups of released fish from Toboggan Creek hatchery marked differentially with a right maxillary clip and a right ventral clip (Table 1) were used as the marked groups. The total

number of coho smolts and the number of adipose fin clipped coho smolts (released as fry in August 1999) were estimated.

The validity of the mark-recapture population estimate relies on several assumptions, which must be met. Mark-recapture estimates require that:

- the populations is closed (no emigration, immigration, births or deaths)
- marked fish are in every way the same as unmarked fish
- marked fish do not loose their marks
- either the marking or the re-capture sample is random, or that marked and unmarked fish mix randomly (Ricker 1975, Bagenal 1978)

Confidence intervals around the estimate were determined by assuming a Poisson distribution of recaptures (R) and by determining the approximate confidence interval of R from statistical tables (Ricker 1975).

2.7 Observations at Buck Creek Release Pond

The Buck Creek release pond (Figures 3 and 4) located near the rotary screw trap location was monitored for predation during several evenings (May 4th to 6th, May 10th to 13th) following releases of hatchery coho into the pond on May 4th and May 9th, 2000. Observations on wildlife signs, frequency and timing of predation were recorded. Environmental conditions during observations (e.g. weather) were also recorded for each sampling event.

Figure 3. Downstream view of Buck Creek Release Pond.

Figure 4. Upstream view of Buck Creek Release Pond.

3.0 Results and Discussion

3.1 Water Level, Discharge and Temperature

Water levels and water temperature were recorded at the staff gauge at Buck Creek Bridge #1, the location of the rotary screw trap, during each trap setting. Water levels and water temperatures are illustrated in Figure 5. Water levels were converted to discharge readings (Figure 6). Since the relationship between staff gauge readings and discharge is linear and since only staff gauge readings were recorded in the previous year of the study (Mackay 1999), the following section does not describe changes in discharge over time. This section describes temperature and staff gauge data collected in May and June 2000.

Staff gauge readings observed in May and June 2000 ranged between 33 and 89 cm. Staff gauge readings were relatively high during the first trap setting on May 21st to 22nd 2000 (80 cm), and decreased gradually to level off between May31st and June 8th (between 52 and 55 cm). The initially high staff gauge readings are indicative of spring run off resulting from snow melt. Following June 8th, staff gauge readings increased rapidly to a high of 89 cm on June 11th , and declined for the remainder of the study to a low of 33 cm on June 28th 2000. Staff gauge readings fluctuated over a wider range in May and June 2000 than in June 1999. Water levels at the same location ranged between 44 and 82 cm in June 1999 (Mackay 1999). Staff gauge readings in June 1999 were highest between June 1st and June 10th (ranging between 70 and 82 cm), exhibiting a broader and earlier peak than that observed in June 2000. Staff gauge readings in the mid and end of June 1999 remained higher (44-65 cm) than those observed in 2000. Overall, water levels observed in May and June 2000 appear to be somewhat lower than those observed in June 1999, and do not encompass early peaks in Buck Creek resulting from spring run off.

Temperature readings showed little fluctuation during the early part of the study (May 21st to June 2nd. Water temperature readings during the study ranged between 6 and 14 °C. Water temperature in the end of May were near 6°C, and increased to 10°C by June 3rd 2000. Water temperatures fluctuated between 9 and 11°C between June 3rd and June 25th 2000, and increased to a high of 14°C on June 27th and 28th 2000. The peak water temperature observed on June 27th and June 28th 2000 (14°C) were lower than peak water temperatures observed in June 1999 (16°C on June 16th 1999). Lower and delayed peak water temperatures are speculated to be due to the unseasonable cool spring, which resulted in delayed melt of the snow pack, and delayed warming of waters in lakes and streams.

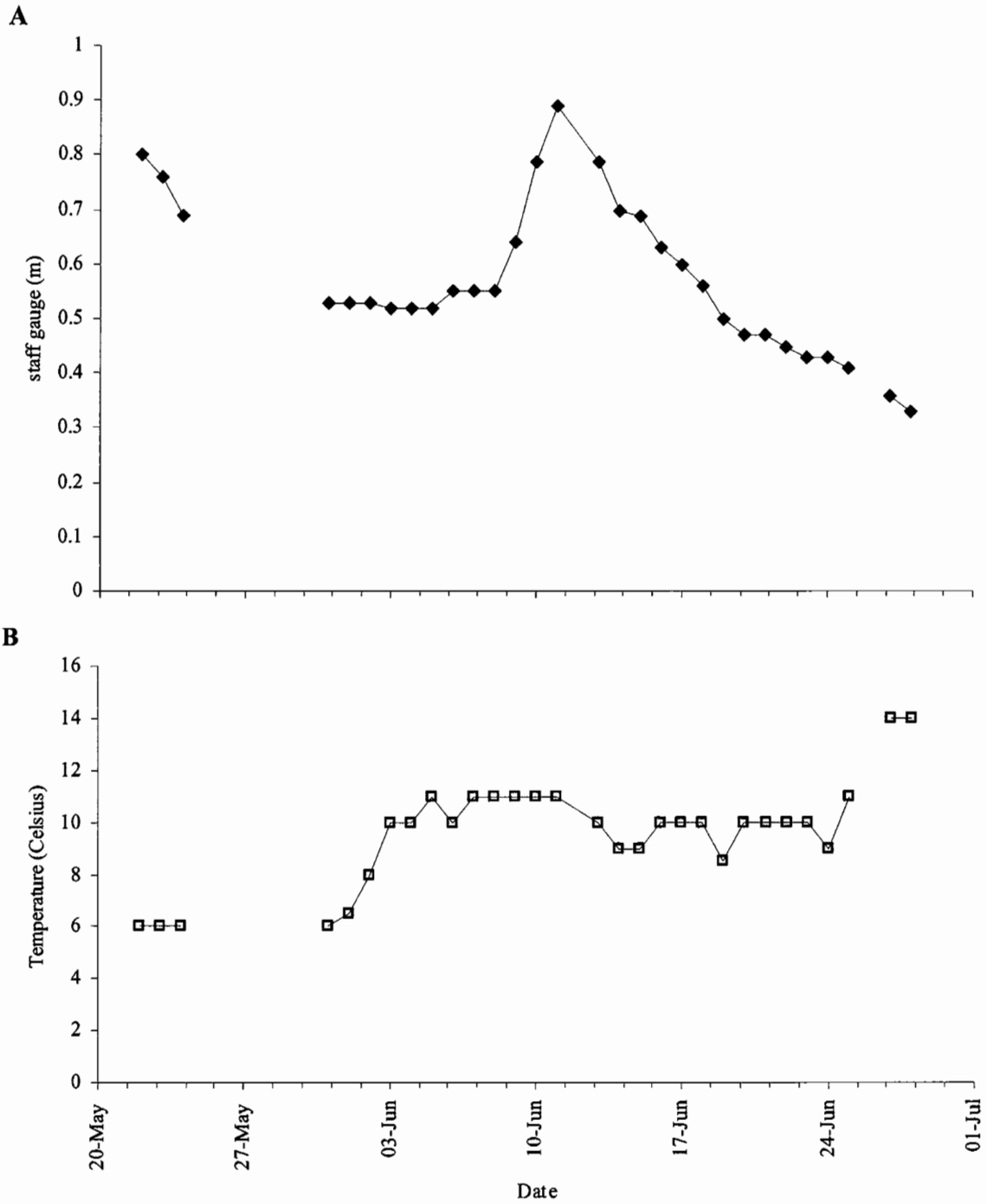

Figure 5. Staff gauge readings (A) and water temperature (B) recorded at the rotary screw trap location in May – June 2000.

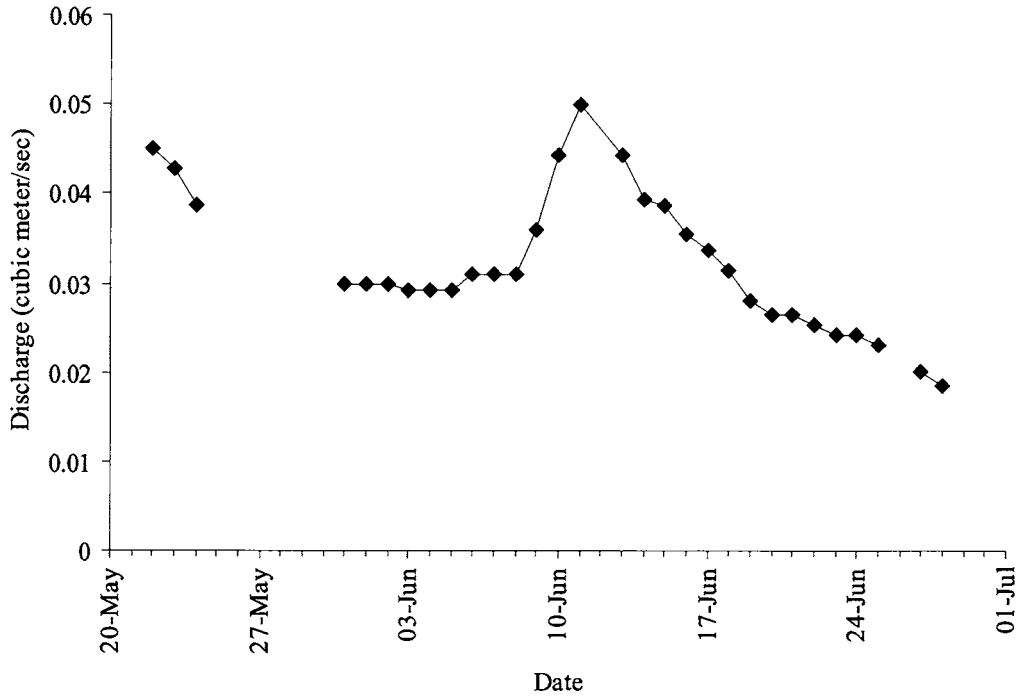

Figure 6. Discharge estimates obtained from staff gauge readings taken at the rotary screw trap location in May and June 2000. Staff gauge readings were converted to discharge using a formula determined by AGRA (2000).

On average, staff gauge and water temperatures were slightly lower in May and June 2000 than in June 1999. The B.C. Environment Water Management Branch indicates that snow pack at their monitoring locations was 70% of normal, and that the relatively cool spring resulted in delayed run-off (McGonigal pers. comm.). We therefore speculate that lower water levels are likely attributable to a lower than average snow pack, and relatively cool spring causing delayed melting and lower water temperatures. Difficulties observed during the operation of the eight foot rotary screw trap in June 1999 due to low water levels and the small size of Buck Creek were exacerbated by even lower water levels in May and June 2000.

3.2 Trap performance

Three mark-recapture experiments were conducted to evaluate trap efficiency (Table 2). In addition, mortality was documented on each sample day. Of the 2,971 salmonids captured in the rotary screw trap, only two coho (0.1%) were recorded dead on June 23rd 2000. Drastic increases in water levels on June 10th – 11th caused heavy debris loading in the trap, and caused the trap to cease operation efficiently during the setting. Results of the three mark-recapture experiments are summarized in Table 2. The number of coho marked and re-captured were grouped into two different size groups (fork length <100 mm and ≥ 100mm). Sufficient numbers of coho less than 100 mm were captured during one of the three mark-recapture trap efficiency tests. Trap

Table 2. Results of three separate mark-recaptured experiments used to evaluate trap efficiency.

Date marked	Type of mark	# marked			Dates recaptured	# recaptured			Trap efficiency		
		< 100 mm	≥ 100 mm	total		< 100 mm	≥ 100 mm	total	< 100 mm	≥ 100 mm	total
June 5th	Top caudal	3	86	89	June 7-10	0	9*	9	0.0%	10.5%	10.1%
June 15th	Bottom caudal	28	98	126	June 16-17	3	19	22	10.7%	19.4%	17.5%
June 22nd	Top caudal	0	198	198	June 23rd	0	20	20	n.a.	10.1%	10.1%

* one of the recaptures on June 10th was identified as a rainbow trout/steelhead upon second capture; a second rainbow trout/steelhead recapture on this day had been marked with a bottom caudal clip (possible marked on June 9th?) – this fish was not included in the trap efficiency calculation.

efficiency generally ranged between 10.1 and 19.4% for coho greater than or equal to 100 mm, and between 10.1 and 17.5% if smaller sized coho were included (total coho marked and recaptured). Trap efficiency was slightly higher for the second mark-recaptured estimate conducted on June 15th for which fish were re-captured on June 16th and 17th. Flow conditions on these three days was moderate (Figures 5 and 6), with staff gauge readings decreasing from 69 cm on June 15th to 60 cm on June 17th. Staff gauge and discharge were higher during the initial mark recapture estimate (staff gauge ranged between 52 and 79 cm), and lower during the last mark recapture estimate (staff gauge readings between 43 and 45 cm). Based on the three mark-recapture experiments, overall trap efficiency appears to vary between 10.1 and 17.5 %.

3.3 Migration Rates and Fish Abundance

3.3.1 Coho Migration Rates and Abundance

3.3.1.1 Migration Rates

Coho migration rates were estimated using catch per unit effort over time. Migration rates for coho of two different size groups (FL < 100 mm and FL ≥ 100 mm, Figure 7) were graphed over time. Peaks in migration between the two size classes match closely. Peak migration occurred between June 3rd and June 10th, June 13th to June 20th 2000. In addition, coho less than 100 mm in length peaked in the end of June while coho greater than 100 mm in length remained at low levels. This indicates that larger coho complete their smolt migration past the rotary screw trap location earlier than smaller size coho. A lack of coho greater than 100 mm in fork length towards the end of June has also been noted in Toboggan Creek during the operation of a fyke trap (Saimoto 1995, SKR 1996), rotary screw trap (SKR 1997, 1998) and a wolf type weir (SKR 1999). Some of these smaller size fish may not actually be smolting in 2000, but may be captured in the rotary screw trap as they distribute themselves over summer rearing habitat found in Buck Creek.

Coho migration rates were graphed separately for each type of marked fish released into Toboggan Creek (adipose clipped, adipose and right maxillary clipped, left ventral clipped and un-marked) (Figure 8). While peaks in migration between the different mark groups generally overlap, groups released as one year olds in the spring (ventral clip, adipose and maxillary clip) migrated earlier in the study than coho released the previous August at age 0+ (adipose clipped) or the wild coho (un-marked). It appears that fish released into Buck Creek in May 2000 did not remain in the system for long, but migrated downstream within a short time after their release.

Coho migration rates were compared to temporal variations in temperature and discharge (Figures 7 and 8). The initial peak in migration (June 3rd and June 11th) matches increases in discharge, but water temperatures were relatively consistent over this time period. The second peak in migration occurred during declining discharge, while the third peak in migration occurred in late June, with increasing water temperature and continual declines in discharge. Trap efficiency during this time period varied between 10.1 and 17.5%, with the higher trap efficiency occurring during moderate flows. Observations by the crew indicate that trap efficiency is reduced at high and low discharge levels (Tamblyn pers. comm.).

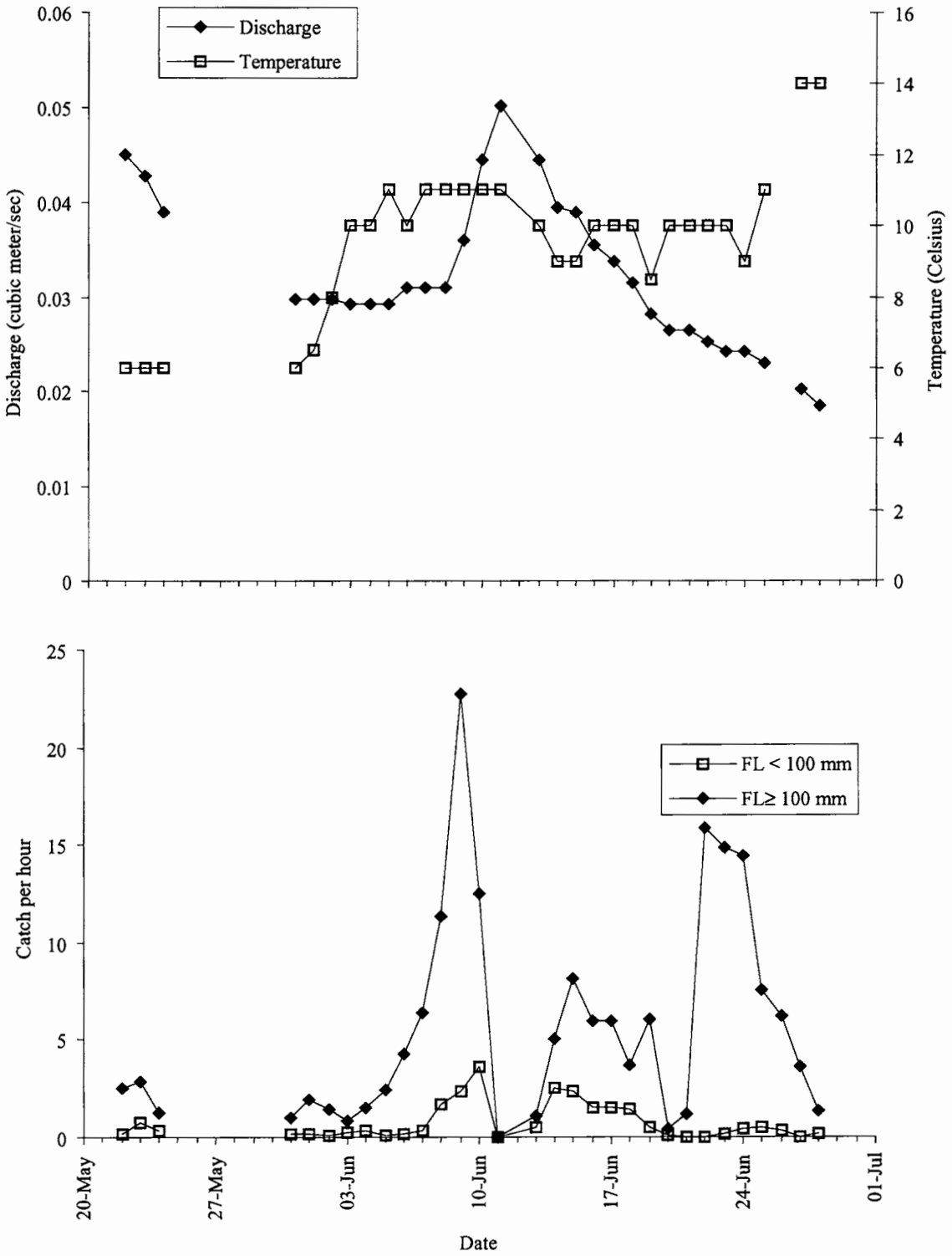

Figure 7. Discharge estimates and water temperature (above) and catch per unit effort for coho smaller and greater than 100 mm fork length (below).

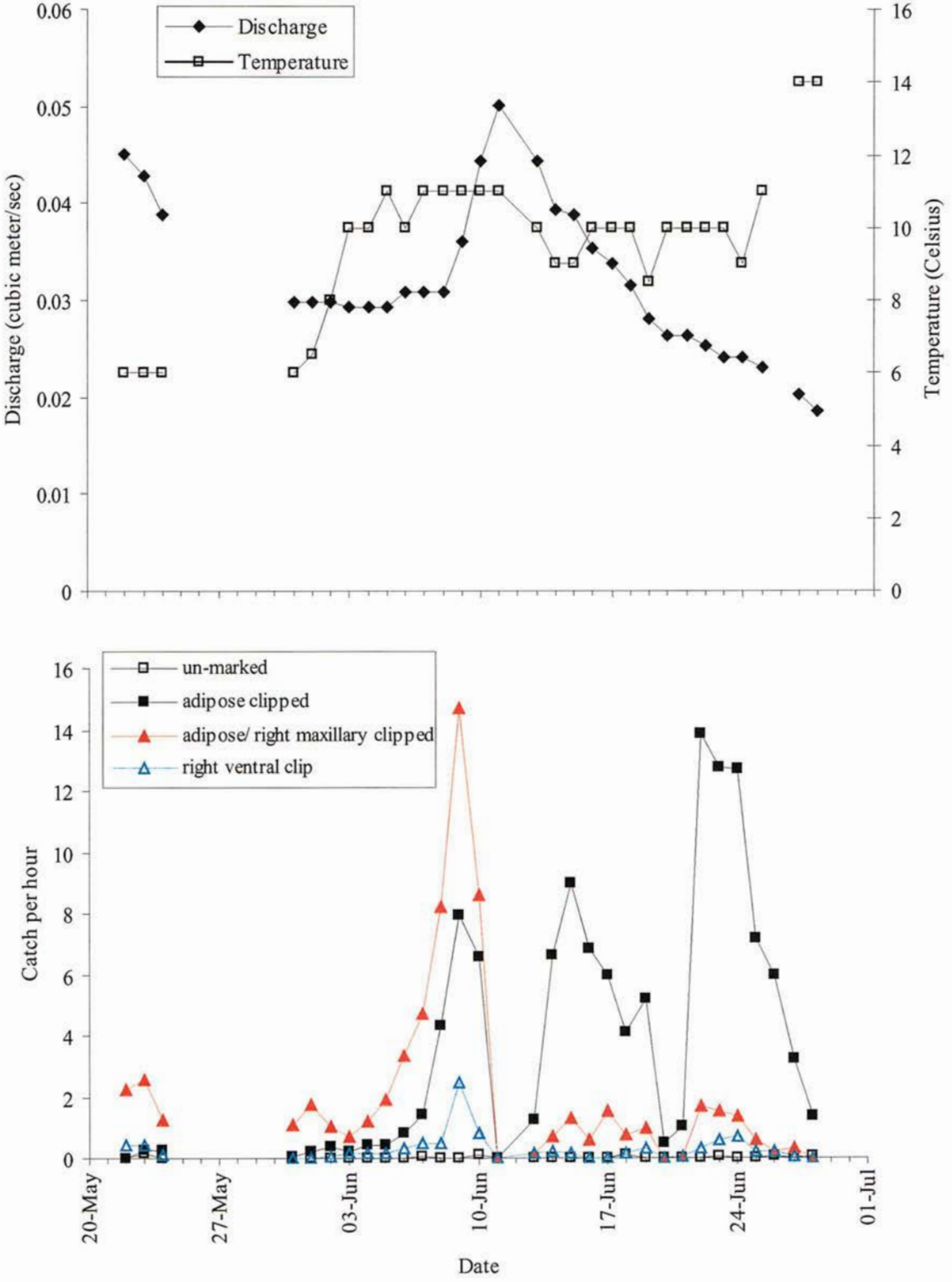

Figure 8. Discharge estimates and water temperature (above) and catch per unit effort for coho (below).

Trends in coho migration rates observed in May and June 2000 have some similarities to those observed in June 1999 (Mackay 1999). Water levels in early June 1999 were consistently high, with staff gauge readings fluctuating between 70 cm and 80 cm between June 1st and June 10th 1999. Migration rates observed in the study were highest during this time interval for hatchery coho released in the spring of 1999. Discharge in 1999 declined towards the end of June, and migration rates of hatchery coho were low for the remainder of the study. Migration rates have also been found to be correlated with discharge and water temperature at Toboggan Creek (SKR 1999). Based on two years of observation in Buck Creek, migration rates indicate that migration of coho released in the spring are higher early in the season than for wild coho or coho released in the previous summer/fall. Wild coho smolts and coho smolts originating from fry released in the previous summer or fall appear to migrate slightly later past the rotary screw trap.

3.3.1.2 Abundance

The estimated number of coho smolts migrating past the rotary screw trap in May and June 2000 was estimated using adjusted Petersen mark-recapture population estimates (Table 3). Petersen estimates were calculated using the number of released right maxillary coho (16,000) and right ventral coho (2,400) as the known marked groups (Table 1). Because the accuracy of the number of coho released is unknown, the accuracy of the population estimates based on these numbers should be viewed with caution. The number of coho marked with these two marks were also grouped to derive a third adjusted Petersen estimate. The estimated number of coho smolt migrating past the rotary screw trap ranges from 51,479 to 51,611 (95% Confidence Interval (CI) = 43,279 to 61,978) among the three estimates calculated. Due to the larger number of marked and recaptured coho in the combined group and the right maxillary marked group, the confidence intervals around these estimates are narrower than for coho marked with the right ventral clip. The two estimates derived for the right maxillary coho only, and for the combined coho are therefore deemed more accurate. Confidence intervals around these population estimates are relatively narrow (6.33 to 7.39%). We therefore estimate that between 47,997 and 55,282 coho moved past the rotary screw trap in the spring of 2000.

Wild coho production in Buck Creek upstream of the rotary screw trap location appears to be low. The number of wild coho captured in May and June 2000 was minimal (nine) compared to the total number of coho (2428) captured in the study. Similarly, the number of wild coho captured in June 1999 was low (five wild coho of 125 coho captured, Mackay 1999). Few coho were captured during a watershed restoration project conducted in Buck Creek in 1998 (BCCF 1998). However, considerably more wild coho than hatchery coho were reported in Buck Creek during an overwinter study conducted in November 1999 to March 2000 (Donas and Saimoto 2000). Most of the evidence suggests that current natural coho production in Buck Creek, particularly upstream of the first bridge, is low.

Table 3. Summary of mark-recapture data for the two releases of marked coho into Buck Creek in May 2000. The table includes an estimate of the total number of coho smolts (all marked types) in Buck Creek at the time of the project.

Mark*	Dates released	# released	Dates recaptured	# recaptured	total captured	Population size	95% Confidence Interval			
	(2000)	(M)	(2000)	(R)	(C)	(N)	lower	%	upper	%
RM	05/03	16,000	05/22-06/27	754 (4.7%)	2,428	51478.7	47996.6	6.76	55271.5	7.39
RV	05/03	2,400	05/22-06/27	112 (4.7%)	2,428	51610.9	43278.7	16.14	61978.3	20.09
all	05/03	18,400	05/22-06/27	866	2,428	51552.5	48278.0	6.33	55098.1	6.88

* RM = right maxillary, RV = right ventral (see Table 1 for details)

Table 4. Summary of mark-recapture data for the two releases of marked coho into Buck Creek in May 2000. The table includes an estimate of the number of adipose fin clipped and coded wire tagged coho which were released on August 24, 1999 (80,440) in Buck Creek at the time of the project.

Mark*	Dates released	# released	Dates recaptured	# recaptured	total captured	Population size	95% confidence Interval			
	(2000)	(M)	(2000)	(R)	(C)	(N)	lower	%	upper	%
RM	05/03	16,000	05/22-06/27	754 (4.7%)	1,551	32892.1	30667.2	6.76	35321.9	7.39
RV	05/03	2,400	05/22-06/27	112 (4.7%)	1,551	32976.6	27652.8	16.14	39600.8	20.09
all	05/03	18,400	05/22-06/27	866	1,551	32939.3	30852.8	6.33	35204.7	6.88

* RM = right maxillary, RV = right ventral (see Table 1 for details)

If the true number of smolts moving past the rotary screw trap is between 47,997 and 55,282 (relatively high accuracy as indicated by the narrow confidence intervals), between 4.4 and 5.1 % of the total coho moving past the rotary screw trap were actually captured. This is a considerably smaller percentage than that indicated from the trap efficiency test (estimated between 10.1 and 17.5% trap efficiency). The discrepancy between the trap efficiency test conducted during the study, and the estimated percent of the total population captured may be due to the relatively late implementation of the rotary screw trap. The rotary screw trap was not fished effectively until May 21st 2000. A considerable number of right ventral and right maxillary clipped coho may have moved out of the system prior to this data, reducing the number of marked fish in the system at the time of initiation of the study. Migration of coho marked with adipose fin and maxillary clips, and coho marked with right ventral clip appears to peak prior to peak migration of adipose clipped and un-marked coho (Figure 8), indicating that coho released in the spring emigrate shortly after their release. This suggests, that in addition to affects of timing of the study, some of the assumptions of the Petersen estimate may be violated (marked fish released in May 2000 are not the same as wild fish or marked fish released in August 1999; samples are not random). This does not affect the mark-recapture experiments conducted during the study since the known number of marked fish was released when the trap was operating effectively. High discharge in May, and behavioural effects due to release (e.g. immediate movement upon release) may be responsible for a significant proportion of marked fish moving prior to May 21st, accounting for the apparent discrepancy between trap efficiency tests and population sizes determined in Table 3.

Petersen estimates were also calculated to estimate the total number of adipose fin clip and coded wire tagged coho migrating past the rotary screw trap (Table 7). A total of 80,440 adipose fin clipped and coded wire tagged coho were released into Buck Creek on August 24th 1999. Coho released on August 24th 1999 were about 4.2 grams in size, and were expected to smolt in the spring of 2000. These coho may have overwintered in Buck Creek, or moved to alternate habitat (e.g. Bulkley River mainstem) to overwinter. The estimated number of adipose fin clipped coho moving past the rotary screw trap in May and June 2000 ranges between 32,892 and 32,939 (CI = 27,659 to 39,601) based on Petersen estimates using right maxillary and right ventral clipped coho. As for the total population estimate, confidence intervals are considerably narrower for estimates derived using right maxillary clipped coho, or the combined sample of marked coho. This is attributable to the larger number of marked fish and the larger number of recaptured fish. The two estimates derived for the right maxillary coho only, and for the combined coho are therefore deemed more accurate. Confidence intervals around these population estimates are narrow (6.33 to 7.39%). Trap efficiencies of 10.1 to 17.5% indicate that the number of adipose clipped coho moving past the rotary screw trap between May 21 and June 28 2000 may be significantly lower than the population estimate derived from known releases of tagged fish in early May. This is partly attributable to some migration prior to the implementation of the rotary screw trap. We therefore estimate that between 30,667 and 35,322 adipose clipped coho moved past the rotary screw trap in the spring of 2000, based on mark-recapture estimates, or 8,863 and 15,356 based on trap efficiencies of 10.1 to 17.5%.

A total of 80,440 adipose fin clipped coho were released into Buck Creek, a number considerably higher than the estimated number of adipose fin clipped coho moving past the rotary screw trap. The number of adipose fin clipped coho released in August 1999 is between 45,118 (56.1%) and 49,773 (61.9%) coho greater than the estimated number, based on population estimates using the

known number of right ventral and right maxillary clipped coho. It is expected that this difference between known number of coho released and the number of adipose fin clipped coho in the system are due to migration of marked coho downstream prior to implementation of the study (either in fall, winter, or spring, or a combination of these times), or due to mortality in the winter. Winter is a critical time in the life history of juvenile fish (Bustard and Narver 1975, Swales *et al* 1986, Dolloff 1987). Some researchers have reported overwinter survival ranges from 6% to 73% (Bustard and Narver 1975, Envirocon 1984, Heifetz *et al.* 1986). Assuming a lack of emigration prior to winter, the estimated number of adipose clipped coho migrating past the rotary screw trap based on mark-recapture of right ventral and right maxillary clipped coho gives a survival rate of roughly 38.1% to 43.9 %. Based on trap efficiency estimates, the estimated survival rate would be between 11% and 19.1%. During the upper Bulkley overwintering study, a total of 211 coho were captured in Buck Creek, 13 of which (6.2%) were adipose fin clipped originating from the release of 80,440 coho on August 24th 1999. The remaining 198 coho were wild fish. None of the adipose fin clipped coho were captured downstream of 250 meters downstream of Bridge #1 (rotary screw trap location). If only the coho captured near or upstream of the rotary screw trap location were considered, 13 of 151 coho captured during the overwintering study (8.6%) were adipose fin clipped. The low number of adipose fin clipped coho captured during the overwintering study suggests that the majority of these coho are overwintering elsewhere (e.g. Bulkley River mainstem), or did not survive the fall/winter of 1999/2000. Mortality or emigration from Buck Creek of coho released in August 1999 prior to spring would also account for the substantially lower estimate of adipose fin clipped coho moving past the rotary screw trap in May and June 2000.

3.3.2 CHINOOK MIGRATION RATES

A total of 120 chinook smolts were captured in the rotary screw trap in May and June 2000. Abundance was not estimated since none of the chinook were marked. Two peaks in chinook migration were observed in May and early June, and migration rates of chinook were low after the middle of June (Figure 9). Chinook migration appears to peak earlier than coho migration. The relatively high chinook catch per unit effort in the first trap setting (May 21st 2000) suggests that at least some of the chinook migrated past the rotary screw trap location prior to trapping effectively. During the years that chinook were captured in Toboggan Creek enumeration studies, chinook were captured within the first few weeks of the study, and none were captured after the end of May (Saimoto 1995, SKR 1997, 1998). Although few chinook were captured at Toboggan Creek, the fact that all of these fish were captured early in 1995, 1997 and 1998 indicates that chinook smolt migration precedes coho migration in Toboggan Creek. The same trend was observed at Buck Creek in May and June 2000. Most of the 119 chinook captured in June 1999 were captured between June 10th and June 16th 1999 (Mackay 1999). Peaks of wild and hatchery origin chinook overlapped in the 1999 study. However, the 1999 study was not initiated until June, and many of the chinook leaving the system may have been missed if chinook migration peaks prior to coho migration. Peak in chinook migration may be correlated to some degree with increasing discharge and temperature (Figure 9), although this correlation is not as clear as for coho.

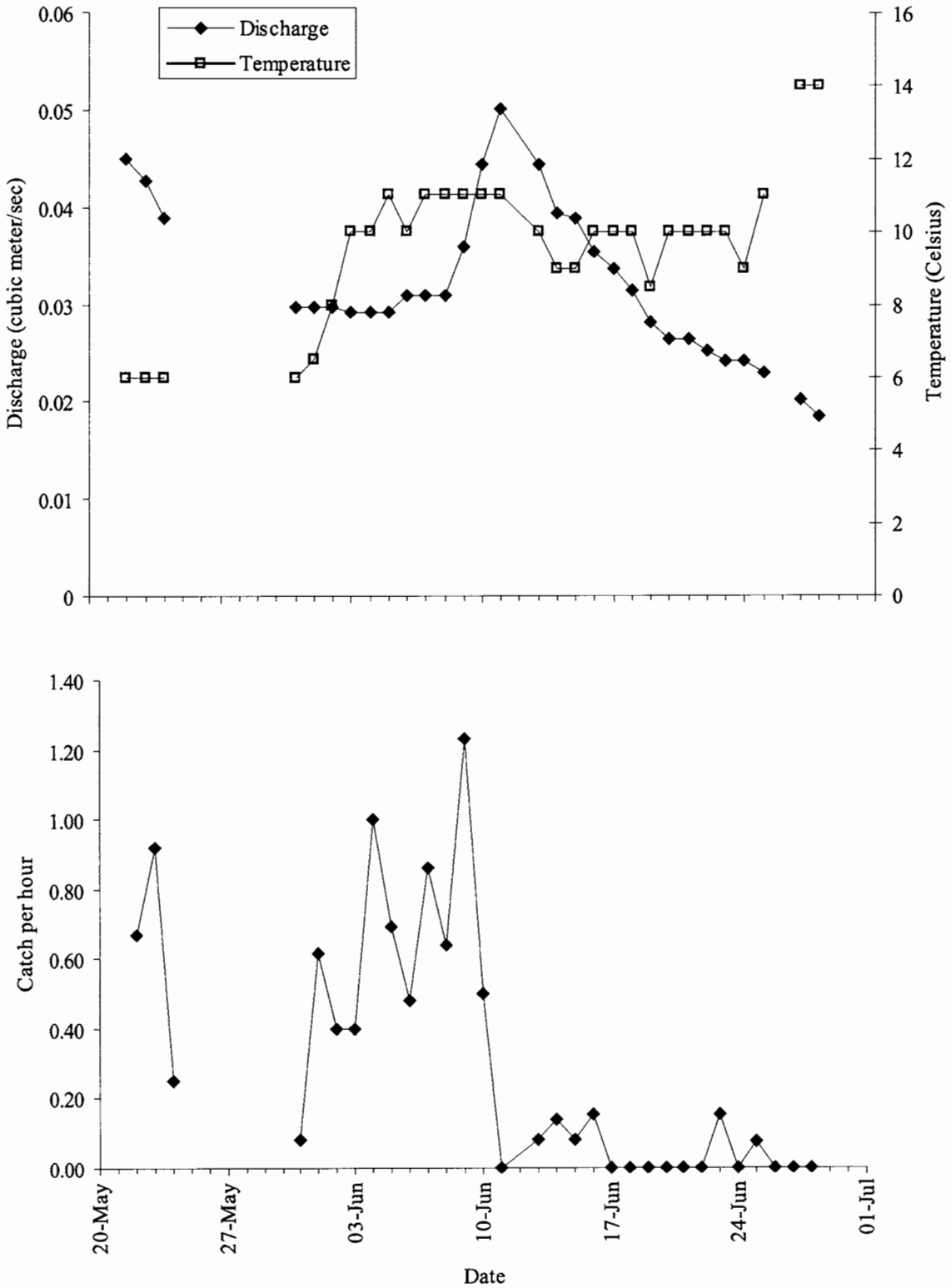

Figure 9. Discharge estimates and water temperature (above) and catch per unit effort for chinook (below).

3.3.3 RAINBOW TROUT/STEELHEAD MIGRATION RATES

A total of 426 rainbow trout/steelhead were captured in the rotary screw trap in May and June 2000, making rainbow trout/steelhead the third most numerous species captured. In addition to the 426 juvenile rainbow trout/steelhead, one spent male and two spent females were captured between June 2nd and June 23rd 2000. Abundance was not estimated since none of the rainbow trout/steelhead were marked. Rainbow trout/steelhead migration rates appear to be more sporadic than chinook or coho migration rates (Figure 10). While rainbow trout/steelhead catch per unit effort peaked during maximum discharge, catch per unit effort for this species was also high during declining and low discharge (e.g. end of June). Rainbow trout/steelhead capture rates at Toboggan Creek generally increase towards the conclusion of smolt studies in the system (Saimoto 1995, SKR 1996, 1997, 1998, 1999), indicating that steelhead smolt migration peaks after chinook and coho smolt migration. Sporadic catch per unit effort in June 2000 may signal the start of smolt migration. However, given the lack of catch per unit effort data for May and July, this is mere speculation. In 1999, most of the 155 rainbow trout steelhead were captured in the rotary screw trap between June 1st and June 21st, with few rainbow trout/steelhead captured after this time. This migration pattern is somewhat different from the migration pattern of rainbow trout/steelhead observed in May and June 2000. Overall, rainbow trout/steelhead migration rates in May and June 2000 do not appear to correlate well with discharge and water temperature.

3.3.4 OTHER SPECIES

A total of 607 lampreys, 13 longnose dace, eleven white suckers, and one cutthroat trout were captured in the rotary screw trap in May and June 2000. Catch per unit effort for lamprey, longnose dace and white suckers is illustrated in Figure 11. The only cutthroat trout was captured on June 22nd 2000. Catch per unit effort for lampreys was highest at the beginning of the study (late May), and remained consistent for June 2000. White sucker and longnose dace catch per unit effort was generally low during the study. One of the longnose dace captured on June 17th 2000 was a female in spawning condition. Longnose dace are known to spawn from May to July in most of their range (Scott and Crossman 1973).

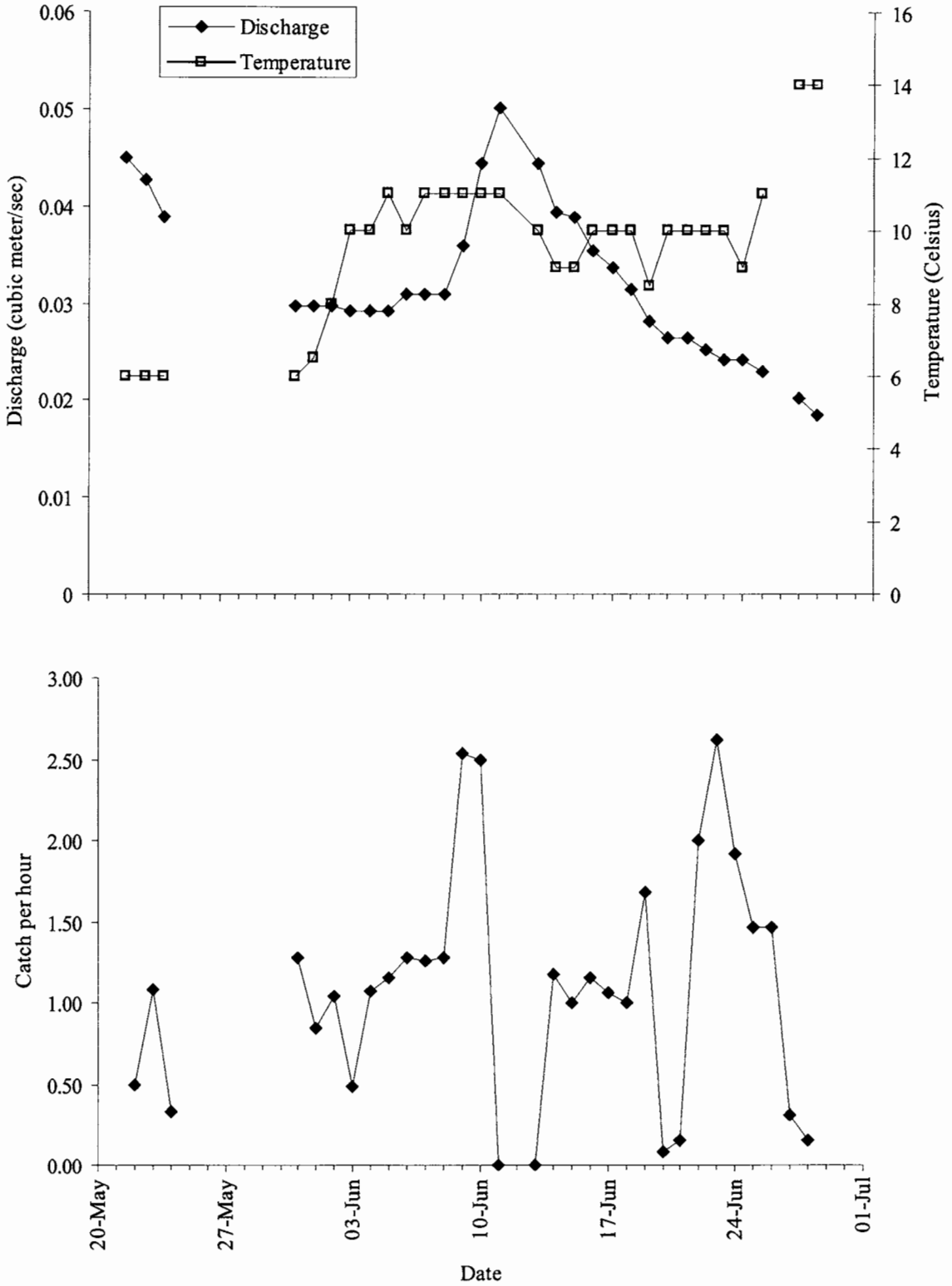

Figure 10. Discharge estimates and water temperature (above) and catch per unit effort for rainbow trout/steelhead (below).

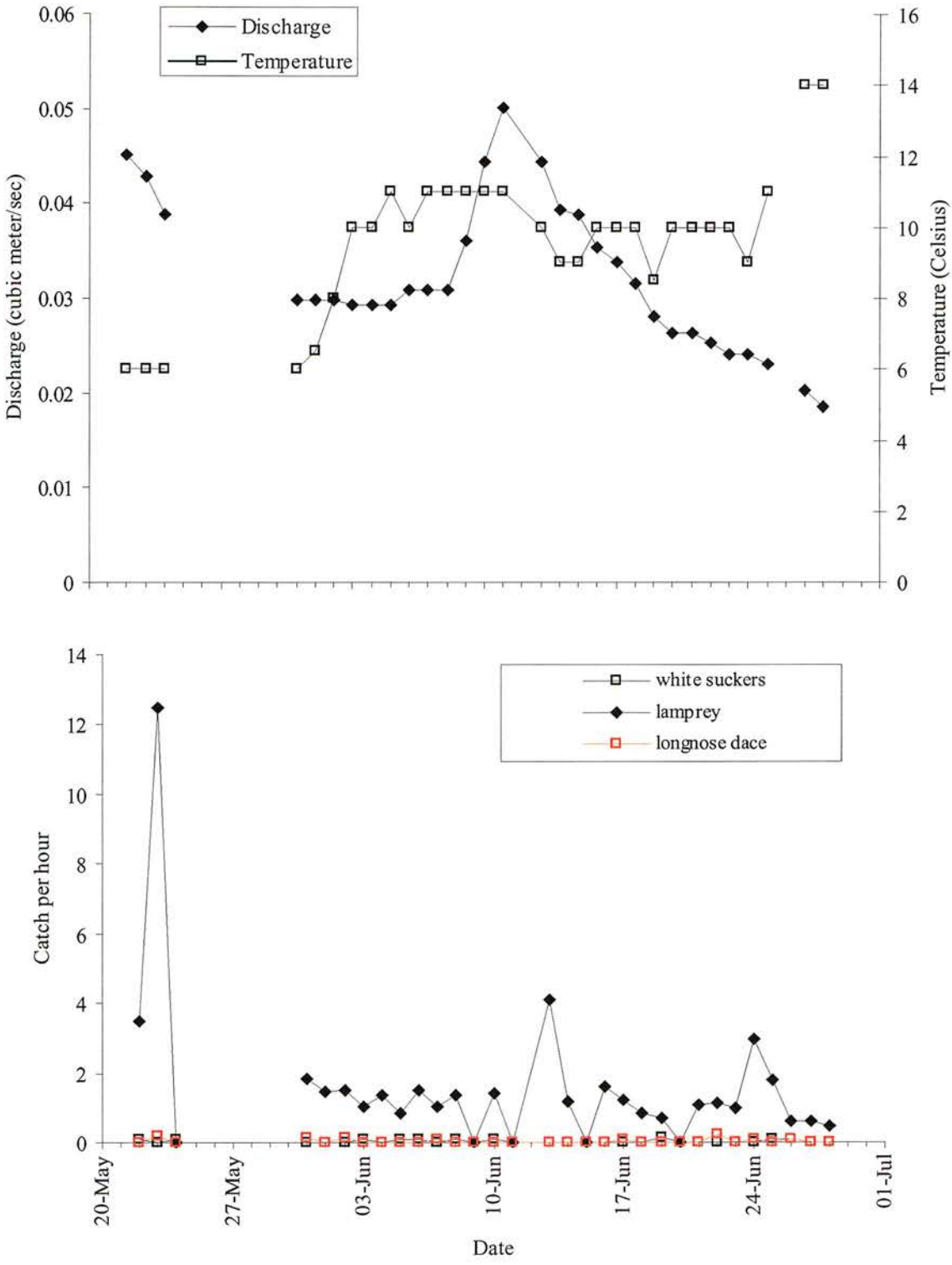

Figure 11. Discharge estimates and water temperature (above) and catch per unit effort for white suckers, lamprey and longnose dace (below).

3.4 Length, Weight and Condition Factor

3.4.1 Coho

All of the coho captured were measured and weighed. Length and weight data for coho re-captured during the trap efficiency experiment were excluded from the length, weight and condition factor data analysis since these fish were included during their initial capture. Fork length frequency analysis (Figure 12) indicates that most of the coho captured are estimated to be from one age group (age 1+). This includes all of the released coho (adipose clipped, adipose and right maxillary clipped, right ventral clipped), and most of the nine wild coho captured. Released coho are known to be age 1+ (1998 brood). Two of the coho captured in the rotary screw trap are estimated to be age 0+, based on their small fork length (52 and 53 mm respectively). Both of these coho are wild coho, and were not smoltifying at the time of capture, and are excluded from subsequent comparisons of fork length, weight and condition factor data between groups of coho captured. Fork length, weight and condition factor data for coho captured in the rotary screw trap are summarized in Tables 5 to 7.

Mean fork length, weight and condition factor for wild and hatchery coho were compared graphically over time (Figure 13). Fork length and weight of adipose and right maxillary clipped coho are consistently higher than mean fork length of adipose clipped coho released in August 1999, right ventral clipped coho, or wild coho. Mean a fork length fluctuates over time, but a slight increase in fork length appears to be present between coho captured in May and coho captured in June. The sample of adipose clipped fish captured on June 28th 2000 has an unusually large mean weight, and condition factor associated with a large standard error. This may be due to measurement or recording error, and the sample is an outlier. Fulton's condition factor appears to remain relatively constant over time. Overall, there are no clear temporal trends in mean fork length, weight or condition factor among the different groups of coho (adipose clipped, adipose and right maxillary clipped, right ventral clipped and wild) over time.

Coho fork length, weight and condition factor for wild and hatchery coho released at various times are summarized in Table 5 to 7, and graphically in Figures 14 to 16. Comparisons of mean fork length, weight and condition factor for coho smolts using ANOVA shows that means differ significantly among the four groups of coho captured (wild, adipose clipped, adipose and right maxillary clipped and right ventral clipped) (F-ratio = 330.78, $p < 0.005$ for fork length; F-ratio = 142.76, $p<0.005$; F-ratio = 286.792, $p<0.005$ for Fulton's condition factor). The groupings explain 29.6% of the variability in fork length, 15.3% of the variability in weight, and 26.7% of the variability in Fulton's condition factor. Post-hoc multiple t-tests show that all four groups differ significantly in fork length (Table 8). It is surprising that adipose and right maxillary marked coho differ significantly from right ventral marked coho in fork length and weight, but not in condition factor. These fish are from hatchery origin, from the same brood year (1998), and were released at approximately the same time (Table 1). Fulton's condition factor is not independent of size (Ricker 1975, Bagenal 1978), and smaller fish have been found to have a higher Fulton's condition factor, even though they may not actually be in better condition (Saimoto and Donas 2000). Right ventral clipped coho are significantly smaller (length and weight) than adipose and right maxillary clipped coho, but may

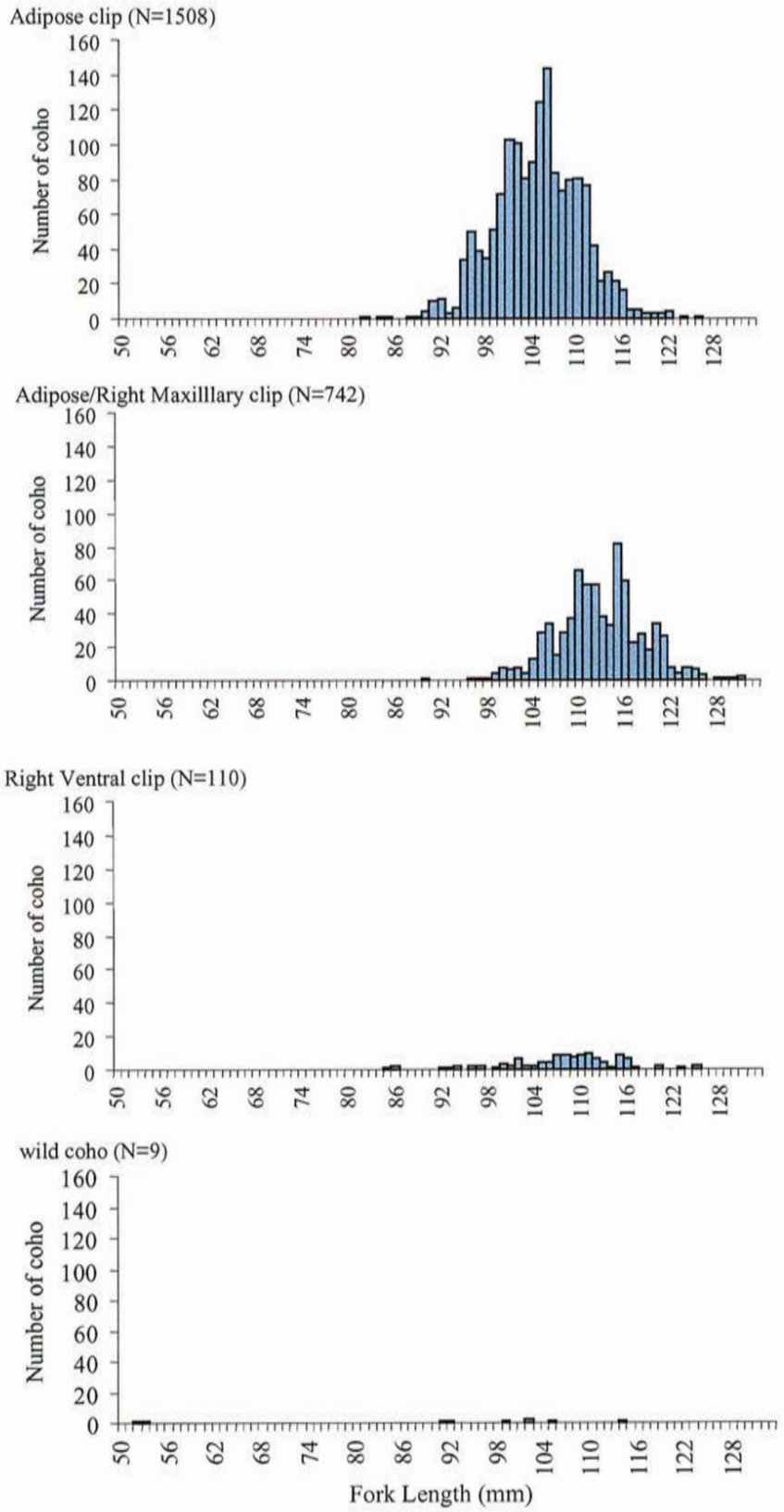

Figure 12. Length frequency distribution of coho captured with different marks (adipose fin clip, adipose and right maxillary clip, right ventral clip, wild coho).

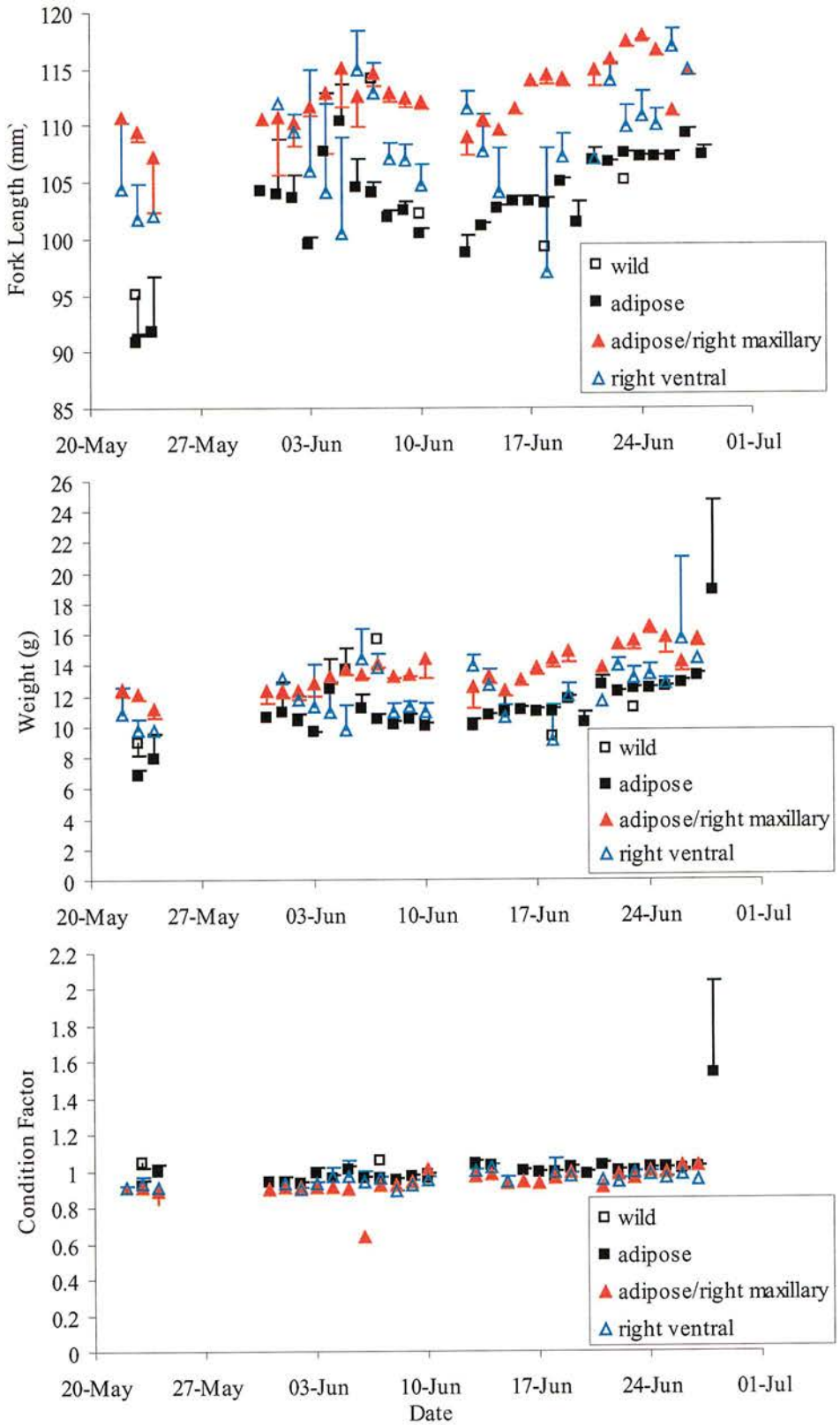

Figure 13. Mean fork length, weight and condition factor of coho captured in the rotary screw trap on each sample date. Error bars indicate standard errors.

Table 5. Summary of fork lengths (mm) data for coho captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

Mark[1]	age 0+				age 1+			
	N	Range	Mean	SE	N	Range	Mean	SE
wild	2	52-53	52.5	0.50	7	91-114	100.7	2.97
AD/RM	---	---	---	---	744	90-131	112.7	0.21
RV	---	---	---	---	110	85-125	107.9	0.70
AD	---	---	---	---	1507	82-126	104.7	0.15

[1]AD/RM = adipose & right maxillary, AD = adipose only, RV = right ventral

Table 6. Summary of weight (g) data for coho captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

Mark[1]	age 0+				age 1+			
	N	Range	Mean	SE	N	Range	Mean	SE
wild	2	1.5-1.6	1.55	0.05	7	8.0-15.7	10.47	0.978
AD/RM	---	---	---	---	744	6.7-22.7	13.43	0.080
RV	---	---	---	---	110	5.3-19.9	12.01	0.225
AD	---	---	---	---	1507	5.5-19.4	11.59	0.050

[1]AD/RM = adipose & right maxillary, AD = adipose only, RV = right ventral

Table 7. Summary of condition factor for coho captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

Mark[1]	age 0+				age 1+			
	N	Range	Mean	SE	N	Range	Mean	SE
wild	2	1.066-1.074	1.0707	0.0040	7	0.958-1.066	1.0104	0.0190
AD/RM	---	---	---	---	744	0.668-1.200	0.9306	0.0020
RV	---	---	---	---	110	0.077-1.336	0.9465	0.0067
AD	---	---	---	---	1507	0.704-1.249	1.0002	0.0014

[1]AD/RM = adipose & right maxillary, AD = adipose only, RV = right ventral

not differ significantly in condition due to the size effect on Fulton's condition factor. The coho that were right ventral clipped consisted of a combination of smaller coho (1998 brood) that could not be coded wire tagged, and remaining larger coho for which there were insufficient coded wire tags at the time of tagging (Donas pers. comm.). This would explain the wider range in size, and the significant differences in size between right ventral clipped coho and coho that were marked with adipose and right maxillary clips Adipose clipped coho released in the fall are similar in length, weight and condition to wild coho in the 1+ age group. In addition, right ventral clipped coho are similar in length, weight and condition factor to wild coho, and are similar in weight to adipose clipped coho. Of the coho captured, the adipose and right maxillary clipped coho released in May 2000 are significantly larger than any of the other groups.

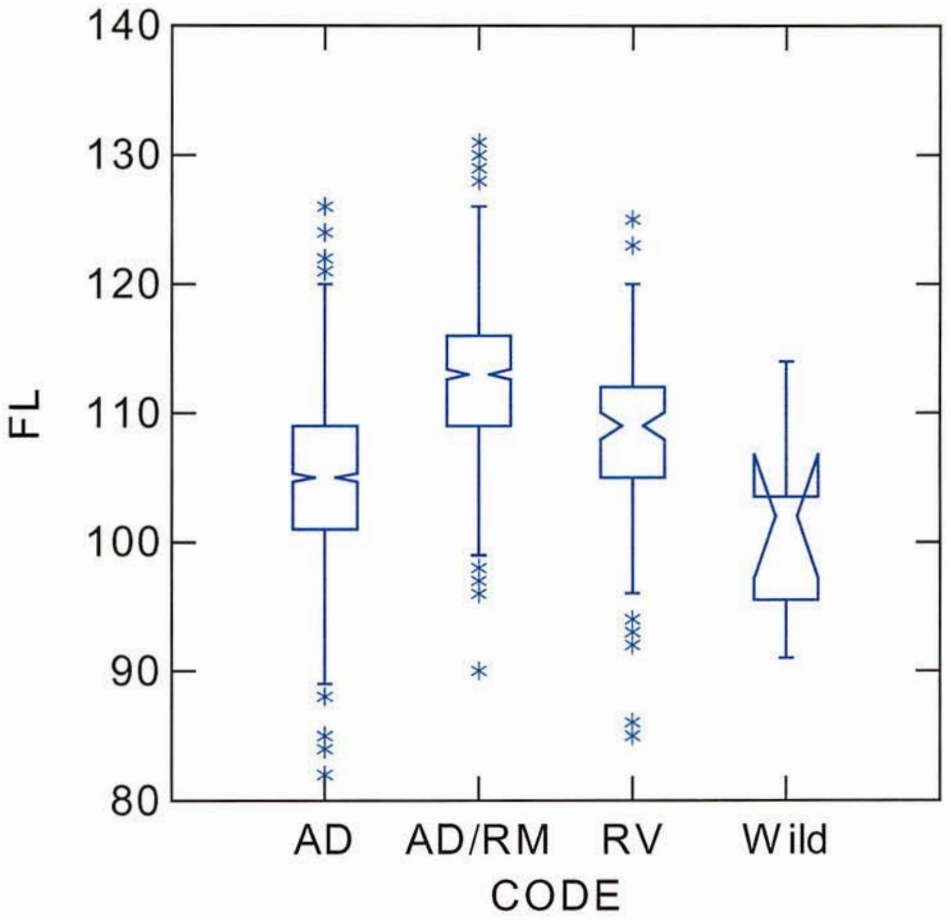

Figure 14. Box plot showing fork length (FL in mm) distribution of adipose clipped (AD) released in August 1999, adipose and right maxillary clipped (AD/RM) released May 3rd 2000, right ventral clipped (RV) released May 3rd 2000 and wild coho captured in the rotary screw trap. Notches indicate 95% confidence intervals.

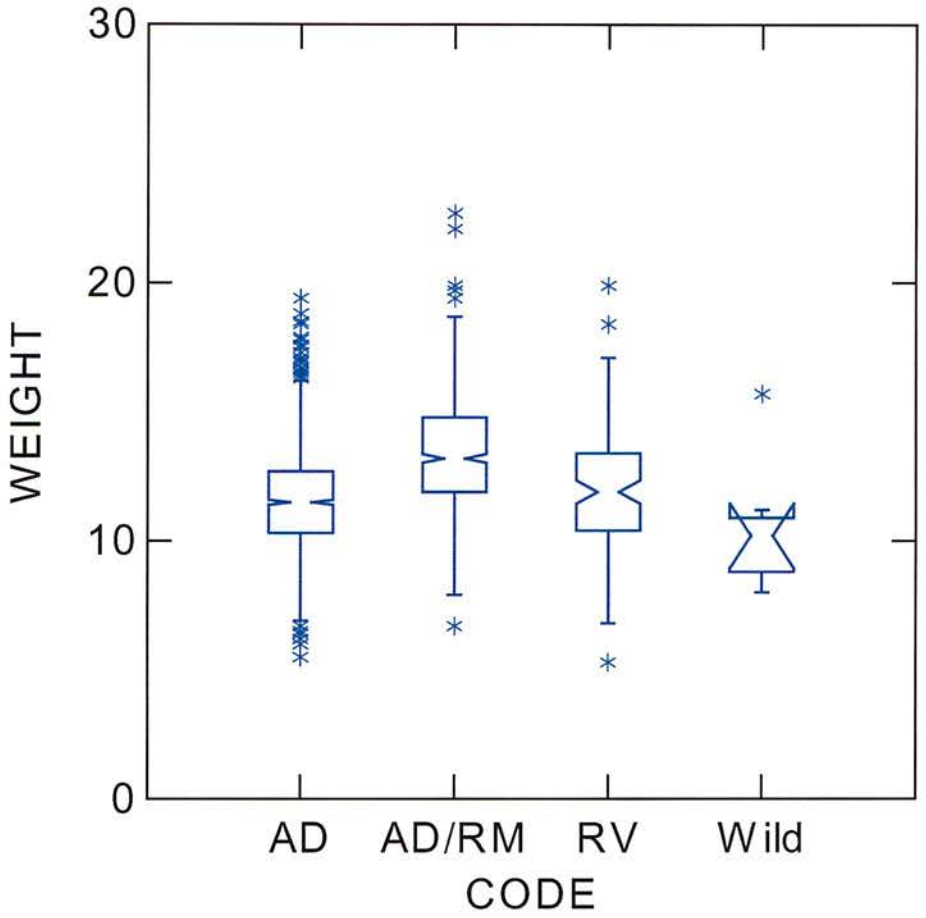

Figure 15. Box plot showing weight (g) distribution of adipose clipped (AD) released August 1999, adipose and right maxillary clipped (AD/RM) released May 3rd 2000, right ventral clipped (RV) released May 3rd 2000 and wild coho captured in the rotary screw trap. Notches indicate 95% confidence intervals.

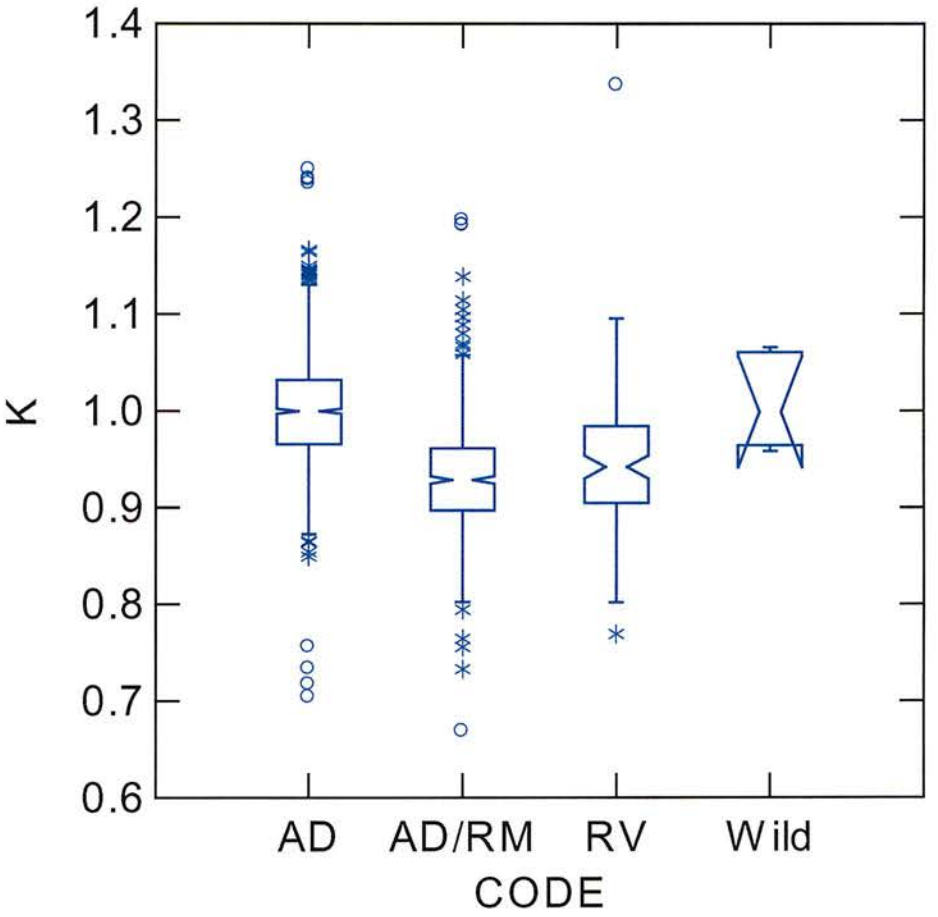

Figure 16. Box plot showing condition factor (K) data of adipose clipped (AD) released August 1999, adipose and right maxillary clipped (AD/RM) released May 3rd 2000, right ventral clipped (RV) released May 3rd 2000 and wild coho captured in the rotary screw trap. Notches indicate 95% confidence intervals.

Table 8. Two sample t-statistics and probabilities (in parenthesis) using post-hoc t-tests for fork length, weight and condition factor for wild and hatchery coho captured during the Buck Creek juvenile salmon trapping project 2000. Statistically significant differences ($\alpha = 0.008$ for Bonferoni adjustment) are indicated in bold text.

Comparisons	Fork Length	Weight	Fulton's condition factor
AD and AD/RM	**-31.553 (p<0.005)**	**-19.448 (p<0.005)**	**28.939 (p<0.005)**
AD and RV	**-4.353 (p<0.005)**	-1.806 (p=0.073)	**7.857 (p<0.005)**
AD and wild	1.362 (p=0.222)	1.147 (p=0.295)	0.540 (p=0.609)
AD/RM and RV	**6.574 (p<0.005)**	**5.937 (p<0.005)**	-2.282 (p=0.024)
AD/RM and wild	**4.028 (p=0.007)**	3.017 (p=0.023)	**-4.176 (p=0.006)**
RV and wild	2.351 (p=0.053)	1.534 (p=0.171)	-3.171 (p=0.014)

Fork length, weight and Fulton's condition factor were compared between wild coho captured in the rotary screw trap in June 1999 (Mackay 1999) and May and June 2000. Comparisons of wild coho captured in the two years of the rotary screw trap project are based on small sample sizes, and results should be considered in light of the low statistical accuracy of these comparisons. The four wild coho captured in 1999 were significantly longer and heavier than the seven wild coho captured in May and June 2000 (Table 9). Fulton's condition factor was significantly greater for the seven wild coho captured in 2000 than for the four coho captured in the rotary screw trap in 1999 (Table 9), but Fulton's condition factor has been shown to be inversely related to size during the Buck Creek overwinter study (Saimoto and Donas 2000). The fact that wild coho captured in 1999 prior to fry releases are larger than coho captured in May and June 2000 may be due to increased competition (greater density of fish) or environmental differences between the two years, among other factors.

Table 9. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for wild coho captured in the rotary screw trap in 1999 (Mackay 1999) and 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text.

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	1999	2000	1999	2000	1999	2000
N	4	7	4	7	4	7
Range	114-126	91-114	13.9-18.7	8.0-15.7	0.92-0.96	0.958-1.066
Mean	118.0	100.7	15.48	10.47	0.938	1.010
SE	2.83	2.97	1.105	0.978	0.008	0.019
t-statistic	**t=4.212, p=0.003**		**t=3.391, p=0.011**		**t=-3.519, p=0.008**	

Wild and adipose clipped coho fork length, weight and condition factor data were compared between coho captured during the 1999/2000 overwinter study (Donas and Saimoto 2000), and coho captured in the rotary screw trap in May and June 2000. In these comparisons, it is important to consider the potentially different size selectivity of sampling methods used. Minnow traps used in the overwinter study are known to be size selective (Swales *et al.* 1986), which would cause a bias in the length, weight and condition factor data obtained using this sampling methods. The size selectivity of the rotary screw trap is unknown, but it should not be assumed that the rotary screw trap is equally effective at sampling all sizes. Wild coho captured in the overwinter study are significantly smaller and lighter than wild coho captured in the rotary screw trap in May and June 2000 (Table 11). Again, Fulton's condition factor shows the opposite trend, with wild coho captured in the winter having a higher condition factor than wild coho captured in the rotary screw trap. In comparisons between wild coho captured in the overwinter study, and wild coho captured in the rotary screw trap it is important to remember the large discrepancy in sample size (189 versus 7), and the mixed age distribution of coho captured in the overwinter study (0+ and 1+). The lower fork length and weight of coho captured during the overwinter sample is partly attributable to comparisons of a mixed sample of age 0+ and age 1+ (such as that obtained in the overwinter study) to a sample of age 1+ coho only. Comparisons of adipose fin clipped coho released into Buck Creek on August 24th 2000 also show that adipose fin clipped coho captured in the rotary screw trap are significantly longer and heavier than adipose fin clipped coho captured in the overwinter study (Saimoto and Donas 2000). Few adipose clipped coho were captured during the overwinter study in Buck Creek, with the number of wild coho in the overwinter study being far greater than the number of adipose clipped coho (8.6% of fish captured during the overwinter study at or upstream of Buck Creek bridge #1 were adipose clipped). However, the number of adipose clipped coho captured in the rotary screw trap in May and June 2000 was far greater than the number of wild coho. The discrepancy in proportion of adipose fin clipped and wild coho may be due to a larger number of 0+ coho captured during the winter. This age group would not be present in the adipose clipped sample, all of which are the same age (1+). However, we feel that this is unlikely due to the consistently low number of wild coho captured in previous studies (Mackay 1999, BCCF 1998). Also, the overwinter habitat sampled may not be the habitat selected for by coho, in which case one may expect smaller fish (generally wild) less able to compete to be displaced into this habitat. This would explain the greater proportion of wild fish in the overwinter study, and the larger size of both wild and hatchery origin fish in the rotary screw trap sample. Alternatively, wild fish may be better competitors in their natal streams than hatchery fish, which have to adapt to new conditions upon released. In this scenario, one might expect wild fish to occupy better habitat, and displace hatchery fish into poorer habitat. Although this would explain the difference in proportion of wild and hatchery fish observed in the overwintering study compared to the proportion captured in the rotary screw trap, it would not explain the increase in size of these fish. The increase in size may be attributable to growth in the spring. Growth between the overwinter study and sampling in May and June may also account for some increase in length and weight of coho between the two studies. Coho are expected to grow somewhat between the end of winter, a time of energy loss, stress, decreased fish health and survival (Bustard and Narver 1975, Dolloff 1987) and May/June due to conditions becoming more favourable for growth. However, these potential explanations are mere speculation. Although sample sizes are widely different between wild and adipose clipped coho captured in the overwinter study and in the rotary screw trap, wild and adipose clipped coho captured in the rotary screw trap are longer and heavier than those captured during the overwinter study.

Table 10. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for wild coho captured in Buck Creek during the overwinter study (Saimoto and Donas 2000) and in the Buck Creek salmon trapping project 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text.

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	overwinter	RST	overwinter	RST	overwinter	RST
N	189	7	189	7	189	7
Range	45-95	91-114	2.0-12.2	8.0-15.7	0.898-4.636	0.958-1.066
Mean	67.3	100.7	5.26	10.47	1.782	1.010
SE	0.69	2.97	0.119	0.978	0.046	0.019
t-statistic	**t=10.772, p<0.005**		**t=5.288, p=0.002**		**t=-15.624, p<0.005**	

Table 11. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for adipose clipped coho (released August 24th 2000) captured in Buck Creek during the overwinter study (Saimoto and Donas 2000) and in the Buck Creek salmon trapping project 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text.

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	overwinter	RST	overwinter	RST	overwinter	RST
N	13	1507	13	1507	13	1507
Range	61-79	82-126	3.5-6.8	5.5-19.4	1.065-1.806	0.704-1.249
Mean	69.4	104.8	4.72	11.59	1.406	1.000
SE	1.39	0.15	0.283	0.050	0.057	0.001
t-statistic	**t=25.25, p<0.005**		**t=23.897, p<0.005**		**t=-7.163, p<0.005**	

3.4.2 CHINOOK

All of the 120 chinook salmon captured in the rotary screw trap between May 21st and June 28th 2000 were measured and weighed. Fork length frequency distribution (Figure 17) indicates that two distinct age classes are present (0+ and 1+), with the majority of chinook captured in the rotary screw trap being 1+. Fork length, weight and condition factor was summarized separately for these two age classes (Table 12). The two largest fish were excluded from the analysis since they were the only chinook marked with a left ventral clip and they are clear outliers in the fork length distribution. It is not known where or when these fish were marked. Left ventral clipped chinook were released into Buck Creek in the spring of 1999 (Mackay 1999) and these chinook may have remained in the system for an additional winter. Jim and Tracey De La Mare also noted that some of the coho and rainbow trout/steelhead captured in the rotary screw trap were recaptured originally marked in the 1998-1999 overwintering study (Donas and Saimoto 1999). It is unknown whether the two marked chinook actually represent an additional age class, as indicated by their mark and their larger size. In addition, it is unknown why these fish may have remained in Buck Creek for one additional winter, if they are indeed 2+ chinook. Only age 1+ chinook, with the exception of the two largest chinook which are considered outliers, are considered in comparisons of fork length, weight and condition factor over time, and comparisons of chinook captured in 1999 and in 2000.

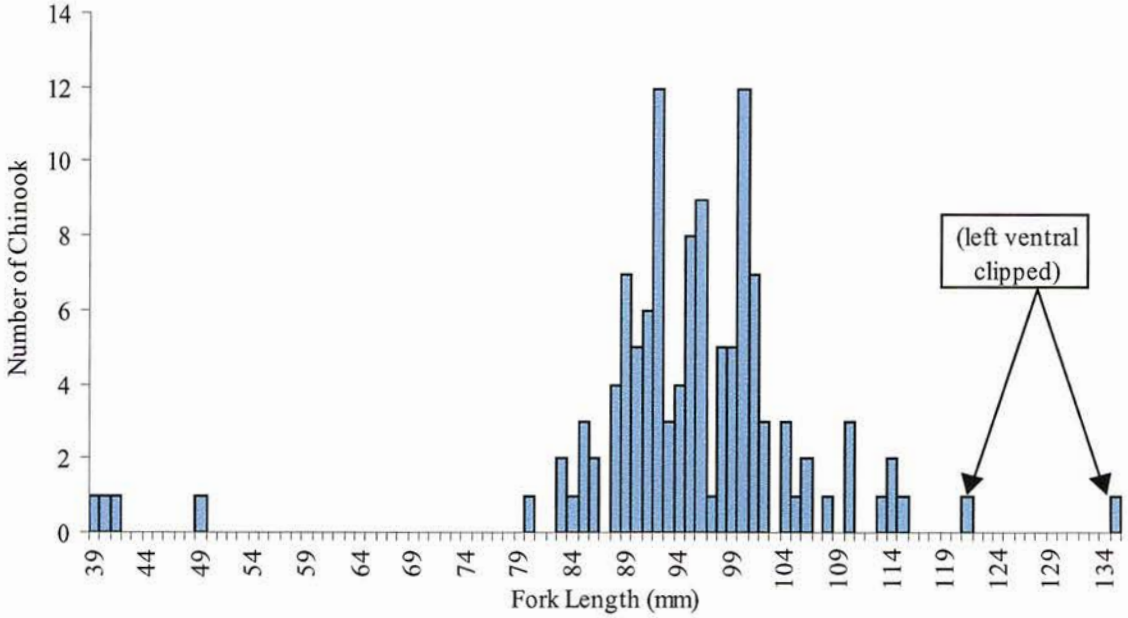

Figure 17 Length frequency of chinook salmon captured in the rotary screw trap in Buck Creek, May 21st to June 28th 2000.

Mean fork length, weight and condition factor were compared graphically over the sampling period (Figure 18). Mean fork length and mean weight for chinook appears to increase gradually over the sampling period for age 1+ chinook. Mean Fulton's condition factor is similar over the duration of the sampling project, near a condition factor of 1. A gradual increase in mean fork length and weight indicates that larger chinook may migrate downstream later than smaller chinook.

Table 12. Summary of fork length, weight and condition factor data for chinook captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

	age 0+				age 1+			
Parameter	N	Range	Mean	SE	N	Range	Mean	SE
Fork Length (mm)	4	39-49	42.3	2.29	114	80-115	95.9	0.65
weight (g)	4	0.5-1.1	0.85	0.126	114	5.6-16.3	9.55	0.204
Condition factor	4	0.84-1.41	1.122	0.1377	114	0.79-1.28	1.068	0.0066

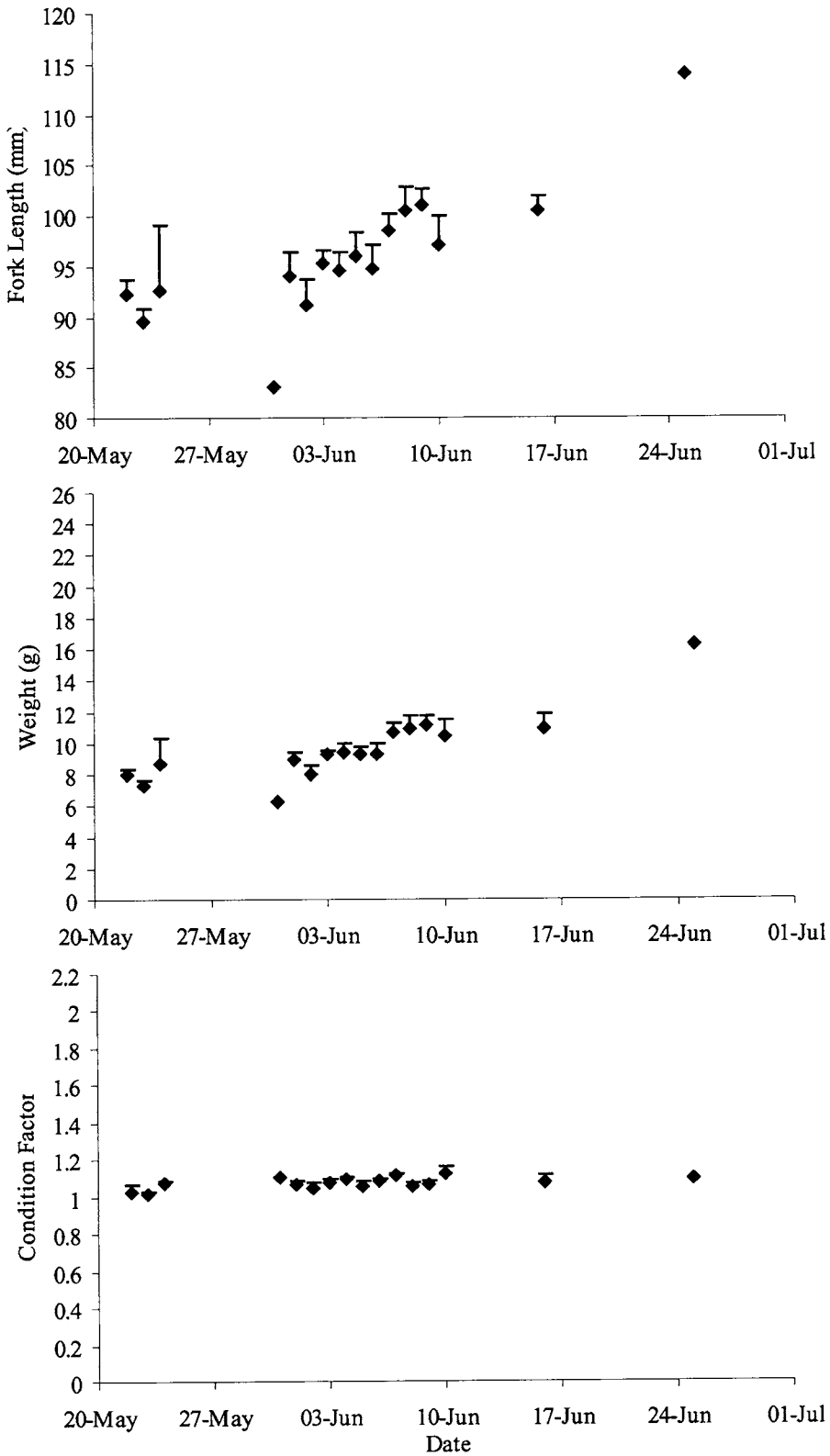

Figure 18. Mean fork length, weight and condition factor of chinook at different sample dates. Error bars indicate standard error.

Comparisons of fork length, weight and condition factor between chinook captured in May and June 2000, and chinook captured in June 1999 (Mackay 1999) were conducted. Only wild chinook were captured in the rotary screw trap in May and June 2000 (with the possible exception of the two ventral clipped chinook), while a combination of wild and hatchery chinook were captured in the rotary screw trap in June 1999. Wild chinook captured in June 1999 are significantly longer and heavier than wild chinook captured in May and June 2000. These may, in part be due to timing of the projects, since chinook captured in May appear to be smaller than chinook captured in June (Figure 19). Small sample sizes of wild chinook in 1999 further weaken statistical comparisons, particularly since the sample of the wild chinook captured in 2000 is more than an order of magnitude bigger. Hatchery origin chinook captured in 1999 are also significantly longer and heavier than wild chinook captured in May and June 2000. This is partly attributable to their hatchery origin, where growth conditions are optimized.

Table 13. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for wild chinook captured in Buck Creek in June 1999 (Mackay 1999) and in May and June 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text. Mann Whitney U-test was used for comparisons due to significant deviations from normality in the fork length samples (significant skewness and kurtosis).

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	1999	2000	1999	2000	1999	2000
N	7	114	7	114	7	114
Range	116-135	80-115	16.2-21.4	5.6-16.3	0.870-1.038	0.79-1.28
Mean	122.7	95.9	17.94	9.55	0.972	1.068
SE	2.24	0.65	0.647	0.204	0.0238	0.0066
t-statistic	**U=798, P<0.005**		**U=796.5, p<0.005**		**U=85, p<0.005**	

Table 14. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for hatchery chinook captured in Buck Creek in June 1999 (Mackay 1999) and wild chinook captured in May and June 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text. Mann Whitney U-test was used for comparisons due to significant deviations from normality in the fork length samples (significant skewness and kurtosis).

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	1999	2000	1999	2000	1999	2000
N	196	114	196	114	196	114
Range	95-136	80-115	10-26	5.6-16.3	0.78-1.27	0.79-1.28
Mean	119.8	95.9	17.60	9.55	1.013	1.068
SE	0.40	0.65	0.175	0.204	0.0054	0.0066
t-statistic	**U=22086.5, p<0.005**		**U=22032.5, p<0.005**		**U=6033, p<0.005**	

3.4.3 RAINBOW TROUT/STEELHEAD

All of the 426 rainbow trout/steelhead captured in May and June 2000 were measured and weighed. Fork length frequency analysis indicates that at least three or four different age classes are present in the sample of rainbow trout/steelhead obtained during the study. In the absence of age data, rainbow trout/steelhead less than 85 mm fork length are grouped as 0+, while the remaining rainbow trout/steelhead were grouped as older than 0+ based on fork length distribution. Fork length, weight and condition factors for age 0+ and age ≥1+ are summarized in Table 15.

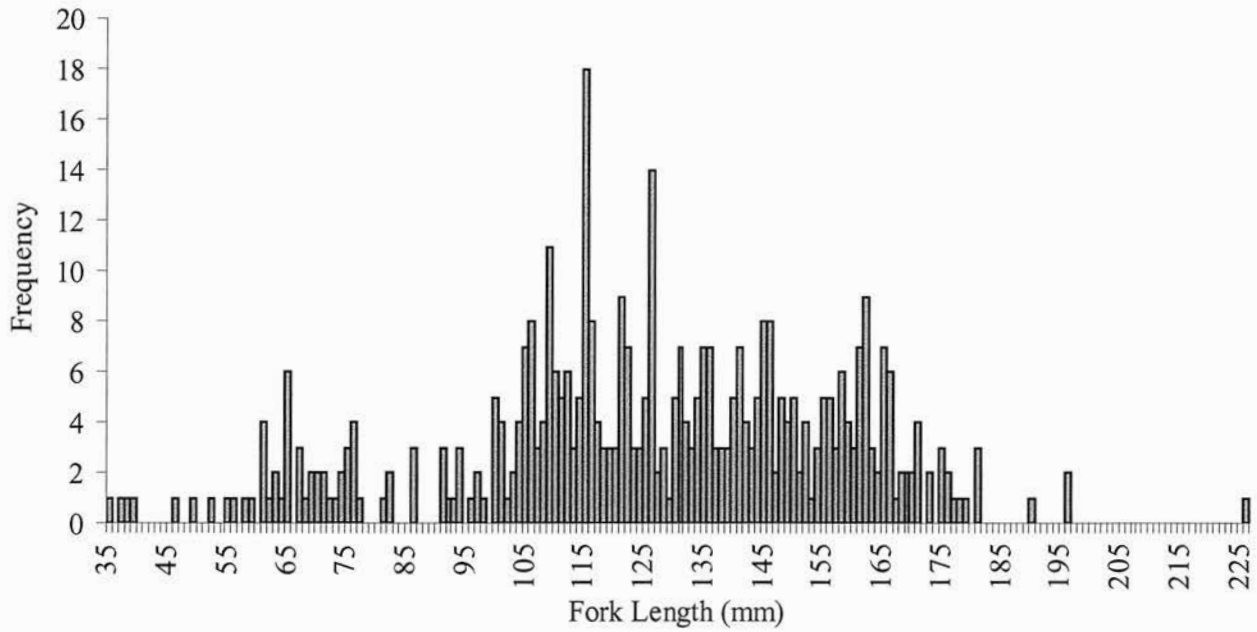

Figure 19. Length frequency of rainbow trout/steelhead captured in the rotary screw trap in Buck Creek, May 21st to June 28th 2000.

Table 15. Summary of fork length, weight and condition factor data for rainbow trout/steelhead captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

Parameter	age 0+				≥ 1+			
	N	Range	Mean	SE	N	Range	Mean	SE
Fork Length (mm)	50	35-82	64.9	1.62	376	86-226	113.7	1.21
Weight (g)	50	0.2-5.9	2.99	0.193	376	6-113.8	26.3	0.708
Condition Factor	50	0.47-3.29	1.008	0.050	376	0.76-1.56	1.017	0.004

Mean fork length, weight and condition factor were compared graphically over the sampling period for all age groups combined (Figure 20). There are no clear trends in mean fork length and mean weight for rainbow trout over the sampling period. With the exception of an unusually high mean Fulton's condition factor on May 24th 2000, Fultons' condition factor for rainbow trout/steelhead captured in the rotary screw trap is relatively consistent, near 1.

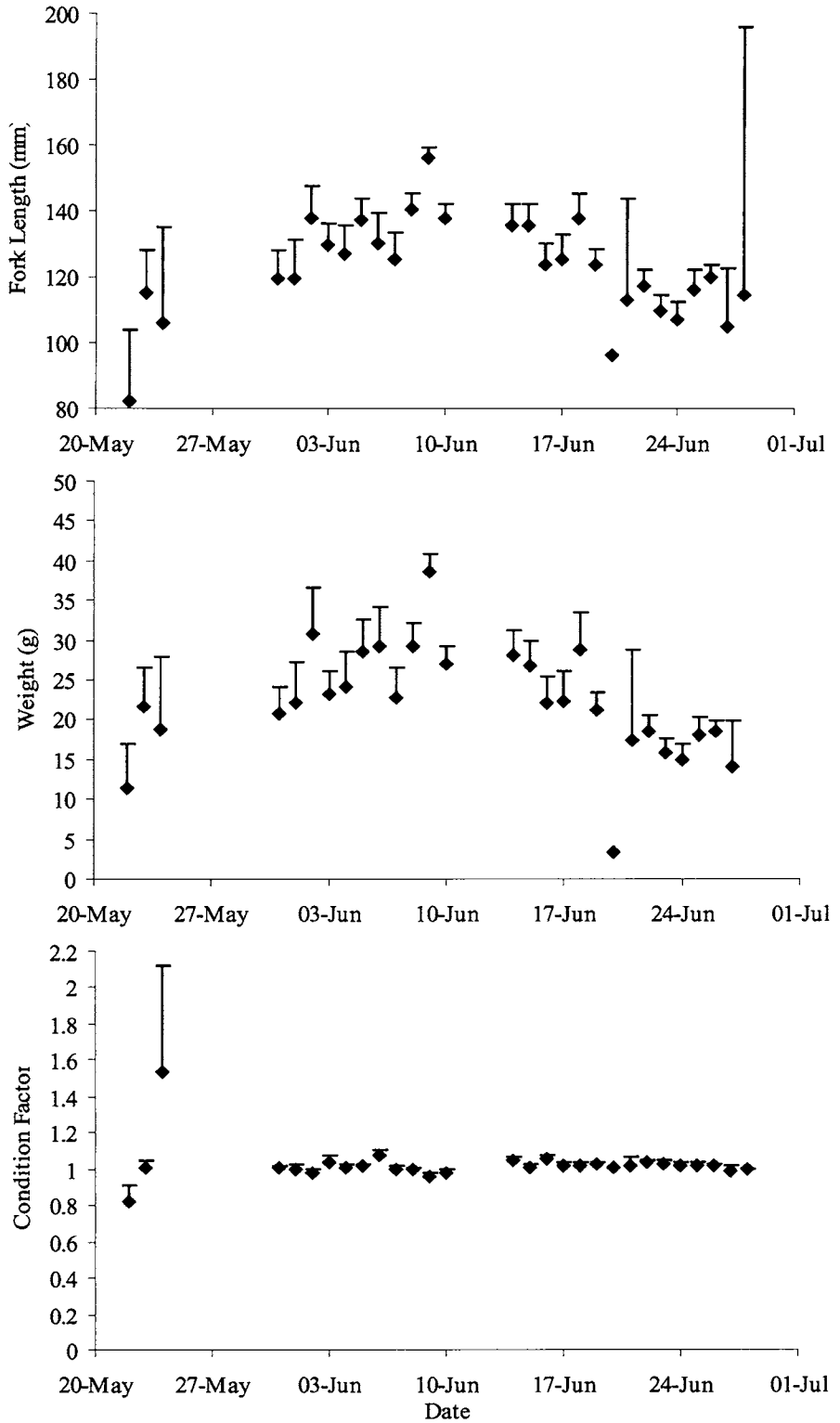

Figure 20. Mean fork length, weight and condition factor of chinook at different sample dates. Error bars indicate standard error.

Mean fork length, weight and Fulton's Condition factor of rainbow trout/steelhead captured in the rotary screw trap in May and June 2000 was compared to rainbow trout/steelhead captured in June 1999 (Mackay 1999). Rainbow trout/steelhead captured in 1999 were significantly longer and heavier than rainbow trout/steelhead captured in May and June 2000 (Table 16). Mean Fulton's condition factor was similar between the two years of the project. Differences in mean length and weight may be due to differences in age structure between the two year (e.g. a greater proportion of older fish in the 1999 sample), differences in growth conditions between the two years (e.g. lower growth rate in 1999/2000 than in previous years), different proportion of rainbow trout and steelhead in the sample, among other potential explanations. Comparisons of rainbow trout/steelhead fork length, weight and condition factors over broad age categories is of limited value due to the confounding effects of age structure.

Table 16. Comparisons of fork length (FL), weight and Fulton's condition factor (K) for wild rainbow trout/steelhead captured in Buck Creek in June 1999 (Mackay 1999) and in May and June 2000. Statistically significant differences ($\alpha = 0.05$) are indicated in bold text. Mann Whitney U-test was used for comparisons due to significant deviations from normality in the fork length samples (significant skewness and kurtosis).

	Fork Length (mm)		Weight (g)		Fulton's Condition	
	1999	2000	1999	2000	1999	2000
N	161	426	161	426	161	426
Range	70-244	35-226	3.4-67.9	0.2-113.8	0.681-1.412	0.466-3.288
Mean	143.4	125.6	31.40	23.55	1.0042	1.0160
SE	2.13	1.53	1.109	0.723	0.00749	0.00681
t-statistic	**U=45685, p<0.005**		**U=45253.5, p<0.005**		**U=32583.5, p=0.412**	

3.4.4 OTHER SPECIES

Fork length and weight were recorded for all white suckers, longnose dace and cutthroat trout captured in the rotary screw trap in May and June 2000. Lamprey were counted, but not measured or weighed. Fork length, weight and Fulton's condition factor data for white suckers and longnose dace are summarized in Table 17. The one cutthroat trout captured measured 71 mm (fork length) and weighed 3.3g. Fulton's condition factor for the cutthroat trout was calculated to be 0.922. White suckers generally spawn in early spring (May and June), and the whitefish captured in the rotary screw trap likely represent two age classes (age 1 and 2), based on age at length data provided in Scott and Crossman (1973). However, growth rate of white suckers is extremely variable from lake to lake, and age distributions of white suckers captured in the rotary screw trap are merely speculated. It is unlikely that white suckers captured in the rotary screw trap were sexually mature, since sexual maturity is generally not attained until age 3 to 8 (Scott and Crossman 1973). Longnose dace captured in the rotary screw trap may represent several age classes, despite the narrow range in fork length. Longnose dace are reported to grow slowly, with a total length of 99 mm being attained by age 5 in a study conducted in Minnesota (Scott and

Crossman 1973). Several of the longnose dace captured in the rotary screw trap were sexually mature, which is not surprising since sampling times overlap with spawning times reported for longnose dace in the literature (Scott and Crossman 1973).

Table 17. Summary of fork length, weight and condition factor data for white suckers and longnose dace captured during the Buck Creek salmonid trapping project 2000 (May and June 2000).

	White sucker				Longnose dace			
Parameter	N	Range	Mean	SE	N	Range	Mean	SE
Fork Length (mm)	11	44-160	115.3	11.58	13	39-96	66.8	5.08
Weight (g)	11	0.7-40.9	18.89	3.797	13	1.5-11.7	3.85	0.930
Condition Factor	11	0.78-1.19	0.981	0.040	13	0.66-1.32	0.969	0.052

3.5 Observations at the Release Pond

Observations at the release pond were conducted following two releases of hatchery fish on May 4th and May 9th 2000. Coho released at both times vacated the release pond within a few days following their release, with very few to no coho remaining in the pond five days after each of the releases. Observations on predation indicate that predation levels were relatively low. A kingfisher was the only potential predator observed at the release pond. This is partly attributable to the rapid movement of fish from the pond. Given the low structural diversity of the pond (Figures 3 and 4), and the observed early movement of hatchery fish released upstream of the rotary screw trap, it is not surprising that coho released into the pond do not remain at their release location for long.

4.0 Recommendations

1. To allow for estimates of population size, it is important to continue marking hatchery coho released in the late summer with a different mark from those released in the spring. This was done faithfully this year, and is encouraged for future years of the project. Releases of batches of coho with different marks upstream of the rotary screw trap is essential in distinguishing between coho originating from different release times of hatchery fish. Most of the data analysis conducted in this report for coho, particularly estimates of population sizes, would not have been possible if the coho released in the spring 2000 were not marked differently from those marked in August 1999. We recommend that at least the coho released upstream of the rotary screw trap in May 2001 are marked differently from those released in the summer/fall of 2000. In addition, if coho are coded wire tagged or marked prior to their release, it would be beneficial to have exact numbers of the number of fish released. The majority of the following recommendations are based on the assumption that hatchery coho released in May 2001 will be marked differently from those released in the summer/fall 2000.

2. Sampling should begin in early May, when spring releases of hatchery fish are conducted. This will ensure that the majority of the smolt migration will be encompassed during the sampling project. It is important to sample early in May since hatchery coho released in early May appear to migrate earlier than hatchery fish released in the later summer, or wild coho. Not sampling the early part of the run will lead to inaccurate population estimates since run timing is dependent on time of release. Using trap efficiency will also result in misleading population estimates if sampling is not conducted in early May since the early part of the run is missed. Trap efficiency may give a relatively good estimate of the population moving past the rotary screw trap during the sampling program, but neglects to encompass migration rates outside of the sampling period.

3. Sampling intensity could be reduced if budget constraints indicate that sampling from early May to the end of June is not feasible. Sampling on a daily basis may not be the most cost effective method of obtaining a population estimate of acceptable accuracy. Sampling should be conducted on days that will encompass the majority of the run time, and sampling intensity should be increased during peaks in migration. The sampling program can be designed to give a minimum recapture rate (e.g. need to recaptured a certain number of hatchery coho released in the spring for accurate population estimate), and the minimum sampling intensity can be designed around this number (with some flexibility during the actual study). Even once the minimum number of recaptures are attained, sampling should continue at a relatively consistent intensity to document if wild coho or coho released in late summer migrate at different times, and to adjust population sizes accordingly.

4. The rotary screw trap should be installed to monitor migration of hatchery coho released in the late summer. Monitoring migration rates in late summer will allow for some distinction between overwinter mortality and emigration of hatchery coho.

5. The rotary screw trap fished in 1999 and 2000 is too large for the system sampled. A smaller (6' diameter) rotary screw trap has been purchased, and should be implemented for future monitoring of migration in Buck Creek. Using the 6' diameter rotary screw trap after releases

of hatchery coho this summer/fall will allow for fine tuning of sampling methodologies prior to smolt migration in the spring of 2001.

6. High water at Buck Creek caused some safety concerns around the rotary screw trap. To establish a safer work environment, a plank-way may be installed from shore to the bank-side pontoon of the trap to allow for safer transport of fish and field staff. The rotary screw trap location was not well lit for night checks. A better lighting system (e.g. portable light) should be purchased if the program is to be continued in future years. Head lamps should be made available to field staff for night checking of the trap.

7. Fish sampling was conducted under less than optimal conditions in the back of a truck. The relatively large number of fish captured indicates that better fish sampling facilities would benefit the program. A portable shed or covered structure should be made available to the field crew for sampling purposes, and for cover during inclement weather.

8. If scale samples are to be collected in future studies, scale samples from wild coho should be included. Age structure of hatchery released coho should be known since these fish originate from a known brood year. This is not the case for wild coho, and scale samples may give additional information for length at age, and age structure in Buck Creek.

9. During the operation of the rotary screw trap, a significant number of marked fish were noted to be marked poorly. This may cause some difficulties in distinguishing hatchery and wild origin adults when they return to spawn in the system. Staff monitoring adult migration should be made aware of the potential presence of some poorly marked adult returns, and data analysis based on the number of wild and hatchery returns should consider the potential that some hatchery origin coho may be mistaken for wild coho.

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BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 1

DATE : From : 21-May To : 22-May

TIME : From : 2200 hrs To : 0800 hrs

Effort (Hrs) : 12 hrs **WATER T.** 6

DISCHARGE : M **WATER LEVEL** 80 cms

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.

SPECIES SUMMARY

COHO	32	**RB/ST**	6	**CHINOOK**	8
DV	0	**OTHER**	42 lamprey 1 white sucker		

COHO SUMMARY

No. Coho < 100 mm. 2

No. Adipose Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	1	1	0

No. Coho > 100 mm. 30

No. Adipose Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	26	4	0

Totals	0	27	5	0

DAY : 2

DATE : From : 22-May To : 23-May

TIME : From : 2200 hrs To : 0800 hrs

Effort (Hrs) : 12 hrs **WATER T.** 6

DISCHARGE : M **WATER LEVEL** 76 cms

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom. This is hard on the main shaft and the bushings.

SPECIES SUMMARY

COHO	43	**RB/ST**	13	**CHINOOK**	11
DV	0	**OTHER**	2 longnose dace		

COHO SUMMARY

No. Coho < 100 mm. 9

No. Adipose Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
3	1	3	2

No. Coho > 100 mm. 34

No. Adipose Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	30	2	0

Totals	3	31	5	2

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 3

DATE : From : 23-May To : 24-May

TIME : From : 2200 hrs To : 0800 hrs

Effort (Hrs) : 12 hrs **WATER** 6

DISCHARGE : M **WATER LEVEL** 69

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.

SPECIES SUMMARY

COHO	19	**RB/ST**	4	**CHINOO**	3
DV	0	**OTHER**	1 white sucker		

COHO SUMMARY

No. Coho < 100 mm. 4

No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
2	2	0	0

No. Coho > 100 mm. 15

No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
1	13	1	0

Totals	3	15	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 4

DATE : From : 30-May To : 31-May

TIME : From : 21:45 To : 8:16

Effort (Hrs) : 12.5 hrs. **WATER** 6

DISCHARGE : L **WATER LEVEL** 53

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom. Some rocks removed from streambed so that trap could fish better.

SPECIES SUMMARY

COHO	15	**RB/ST**	16	**CHINOO**	1
DV	0	**OTHER**	2 longnose dace		

COHO SUMMARY

No. Coho < 100 mm. 4

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	2	0	0

No. Coho > 100 mm. 15

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
1	12	0	0

Totals	1	14	0	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY :	5	**DATE :** From :	31-May	To :	01-Jun
		TIME : From :	19:30	To :	8:30
		Effort (Hrs) :	13.0 hrs.	**WATER**	6.5
		DISCHARGE : (High, Moderate, Low)	L	**WATER LEVEL**	53

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom. Due to decreasing water level, trap may not be fishing this weekend. No trap efficiency testing has been done yet.

SPECIES SUMMARY

COHO	27	**RB/ST**	11	**CHINOO**	8
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 2

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
2	0	0	0

No. Coho > 100 mm. 15

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
1	23	1	0

Totals	3	23	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 6

DATE : From : 01-Jun To : 02-Jun

TIME : From : 19:30 To : 8:00

Effort (Hrs) : 12.5 hrs. **WATER** 8

DISCHARGE : L **WATER LEVEL** 53

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.
One adult male steelhead kelt caught - approx. 5 lbs and 55 cm. Long

SPECIES SUMMARY

COHO	19	RB/ST	13	CHINOO	5
DV	0	OTHER	2		

COHO SUMMARY

	No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
No. Coho < 100 mm. 1	1	0	0	0
No. Coho > 100 mm. 18	4	13	1	0
Totals	5	13	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 7

DATE : From : 02-Jun To : 03-Jun

TIME : From : 19:30 To : 8:00

Effort (Hrs) : 12.5 hrs. **WATER** 10

DISCHARGE : L **WATER LEVEL** 52 cms

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.
Fish catch slowing down

SPECIES SUMMARY

COHO 14 **RB/ST** 6 **CHINOO** 5

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 3

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
2	0	1	0

No. Coho > 100 mm. 11

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
1	9	1	0

Totals	3	9	2	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 8

DATE : From : 03-Jun To : 04-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13.0 hrs. **WATER** 10

DISCHARGE : L **WATER LEVEL** 52 cms

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.

SPECIES SUMMARY

COHO 24 **RB/ST** 14 **CHINOO** 13

DV 0 **OTHER** 0

COHO SUMMARY

No. Coho < 100 mm. 4

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
3	0	1	0

No. Coho > 100 mm. 20

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
3	16	1	0

Totals	6	16	2	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 9

DATE : From : 04-Jun To : 05-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13.0 hrs. **WATER** 11

DISCHARGE : L **WATER LEVEL** 52 cms

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.

SPECIES SUMMARY

COHO 33 **RB/ST** 15 **CHINOO** 9

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 1

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	1	0

No. Coho > 100 mm. 32

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
6	25	1	0

Totals	6	25	2	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 10

DATE : From : 05-Jun To : 06-Jun

TIME : From : 20:00 To : 8:30

Effort (Hrs) : 12.5 hrs. **Water T** 11

DISCHARGE : L **WATER LEVEL** 55 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom. Bump in water level due to heavy rain. All coho were top caudal clipped and were held in the IPT. There are 89 Top caudal clipped coho holding in the IPT.

SPECIES SUMMARY

COHO 56 **RB/ST** 16 **CHINOO** 6

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 2

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
2	0	0	0

No. Coho > 100 mm. 54

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
8	42	4	0

Totals	10	42	4	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 11

DATE : From : 06-Jun To : 07-Jun

TIME : From : 19:45 To : 8:30

Effort (Hrs) : 12.75 hrs. **Water T.** 11

DISCHARGE : L **WATER LEVEL** 55 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set. Had to put wooden blocks under the drum beam so that trap wouldn't hit bottom.
The 89 coho that have been top caudal clipped were released about 300 m. upstream of the RST at 8:00 p.m.

SPECIES SUMMARY

COHO 90 **RB/ST** 16 **CHINOO** 11

DV 0 **OTHER** 1 lingcod

COHO SUMMARY

No. Coho < 100 mm. 4

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
4	0	0	0

No. Coho > 100 mm. 86

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
16	62	7	1

Totals	20	62	7	1

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 12

DATE : From : 07-Jun To : 08-Jun

TIME : From : 20:00 To : 8:30

Effort (Hrs) : 12.5 **Water T** 11

DISCHARGE : L **WATER LEVEL** 55 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO 164 **RB/ST** 16 **CHINOO** 8

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 21

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
21	0	0	0

No. Coho > 100 mm. 143

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
33	104	6	0

Totals	54	104	6	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 13

DATE : From : 08-Jun To : 09-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13 **Water T** 11

DISCHARGE : L **WATER LEVEL** 64 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO	328	**RB/ST**	33	**CHINOO**	16
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 30

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
27	0	3	0

No. Coho > 100 mm. 298

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
74	168	26	0
Totals 101	168	29	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 14

DATE : From : 09-Jun To : 10-Jun

TIME : From : 20:00 To : 8:00

Effort (Hrs) : 12 **Water T** 11

DISCHARGE : L **WATER LEVEL** 79 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO 193 **RB/ST** 30 **CHINOO** 6

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 43

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
37	2	2	0

No. Coho > 100 mm. 298

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
42	101	8	1

Totals	79	103	10	1

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 15

DATE : From : 10-Jun To : 11-Jun

TIME : From : 20:00 To : 8:00

Effort (Hrs) : 12 **Water T** 11

DISCHARGE : Moderate **WATER LEVEL** 89 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set.
Water rose 20 cms. and has high turbidity.
Due to heavy rain on Saturday, the trap was set closer to the beach to fish. A piece of slab wood stopped the drum from turning. Debris filled the bottom of the drum. No fish captured.
Pontoons were 5 inches under water.

SPECIES SUMMARY

COHO	0	**RB/ST**	0	**CHINOO**	0
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 0

No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	0	0

No. Coho > 100 mm. 0

No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	0	0

Totals	0	0	0	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 16

DATE : From : 12-Jun To : 13-Jun

TIME : From : 19:30 To : 8:00

Effort (Hrs) : 12.5 **Water T.** 10

DISCHARGE : High **WATER LEVEL** 79 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth :	12 inches from max. set. Trap was moved to left margin. Able to fish at this location until water levels drop below 68 cms. When water hits 68 cms. the trap will be moved one metre closer to the right margin.

SPECIES SUMMARY

COHO 20 **RB/ST** 0 **CHINOO** 1

DV 0 **OTHER** 0

COHO SUMMARY

	No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
No. Coho < 100 mm. 6	6	0	0	0
No. Coho > 100 mm. 14	10	2	2	0
Totals	16	2	2	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 17

DATE : From : 13-Jun To : 14-Jun

TIME : From : 18:00 To : 8:30

Effort (Hrs) : 14.5 **Water T** 9

DISCHARGE : Moderate **WATER LEVEL** 70 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set.
Did not bottom caudal clip any coho today nor were lamprey samples collected due to high turbidity the last few days.

SPECIES SUMMARY

COHO 109 **RB/ST** 17 **CHINOO** 2

DV 0 **OTHER** 0

COHO SUMMARY

No. Coho < 100 mm. 36

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
36	0	0	0

No. Coho > 100 mm. 73

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
60	10	3	0

Totals	96	10	3	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 18

DATE : From : 14-Jun To : 15-Jun

TIME : From : 20:00 To : 8:00

Effort (Hrs) : 12 **Water T** 9

DISCHARGE : Moderate **WATER LEVEL** 69 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : 12 inches from max. set.
All coho were held for another mark/recapture.
A bottom caudal clip was done on all 126 coho.

SPECIES SUMMARY

COHO	126	**RB/ST**	12	**CHINOO**	1
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 28

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
28	0	0	0

No. Coho > 100 mm. 98

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
80	16	2	0

Totals	108	16	2	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 19

DATE : From : 15-Jun To : 16-Jun

TIME : From : 19:00 To : 8:00

Effort (Hrs) : 13 **Water T** 10

DISCHARGE : Moderate **WATER LEVEL** 63 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO	118	**RB/ST**	15	**CHINOO**	2
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 23

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
23	0	0	0

No. Coho > 100 mm. 95

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
83	11	1	0

Totals	106	11	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 20

DATE : From : 16-Jun To : 17-Jun

TIME : From : 19:45 To : 8:00

Effort (Hrs) : 12.25 **Water T** 10

DISCHARGE : Low **WATER LEVEL** 60 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO	92	**RB/ST**	13	**CHINOO**	0
DV	0	**OTHER**	1 Lingcod		

COHO SUMMARY

No. Coho < 100 mm. 19

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
19	0	0	0

No. Coho > 100 mm. 74

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
55	19	0	0

Totals	74	19	0	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 21

DATE : From : 17-Jun To : 18-Jun

TIME : From : 20:00 To : 8:00

Effort (Hrs) : 12 **Water T** 10

DISCHARGE : Low **WATER LEVEL** 56 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO 61 **RB/ST** 12 **CHINOO** 1

DV 0 **OTHER** 0

COHO SUMMARY

No. Coho < 100 mm. 17

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
15	0	1	1

No. Coho > 100 mm. 44

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
34	9	1	0

Totals	49	9	2	1

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 22

DATE : From : 18-Jun To : 19-Jun

TIME : From : 20:00 To : 8:30

Effort (Hrs) : 12.5 **Water T** 8.5

DISCHARGE : Low **WATER LEVEL** 50 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12 inches from max. set.

SPECIES SUMMARY

COHO	81	**RB/ST**	21	**CHINOO**	1
DV	0	**OTHER**	2 White suckers		

COHO SUMMARY

No. Coho < 100 mm. 6

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
6	0	0	0

No. Coho > 100 mm. 75

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
59	12	4	0

Totals	65	12	4	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 23

DATE : From : 19-Jun To : 20-Jun

TIME : From : 20:00 To : 8:30

Effort (Hrs) : 12.5 **Water T** 10

DISCHARGE : Low **WATER LEVEL** 47 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 16 inches from max. set.

SPECIES SUMMARY

COHO	6	**RB/ST**	1	**CHINOO**	1
DV	0	**OTHER**	0		

COHO SUMMARY

		No. Adipos Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
No. Coho < 100 mm.	5	5	0	0	0
No. Coho > 100 mm.	14	1	0	0	0
Totals		6	0	0	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 24

DATE : From : 20-Jun To : 21-Jun

TIME : From : 19:45 To : 8:30

Effort (Hrs) : 12.75 **Water T** 10

DISCHARGE : Low **WATER LEVEL** 47 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : 12.5 inches from max. set.

SPECIES SUMMARY

COHO	15	**RB/ST**	2	**CHINOO**	1
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 0

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	0	0

No. Coho > 100 mm. 15

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
13	1	1	0

Totals				
	13	1	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 25

DATE : From : 21-Jun To : 22-Jun

TIME : From : 20:00 To : 8:30

Effort (Hrs) : 12.5 **Water T** 10

DISCHARGE : Low **WATER LEVEL** 45 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth :	12.5 inches from max. set.
	Trap was moved four metres upstream into 90% of the current.
	All coho that were trapped were top caudal clipped and released at 20:00 hrs. for the third mark/recapture test.

SPECIES SUMMARY

COHO 198 **RB/ST** 25 **CHINOO** 0

DV 0 **OTHER** 3 Longnose dace
1 cutthroat trout

COHO SUMMARY

No. Coho < 100 mm. 0

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	0	0

No. Coho > 100 mm. 198

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
173	21	4	0

Totals	173	21	4	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 26

DATE : From : 22-Jun To : 23-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13 hrs. **Water T** 10

DISCHARGE : Low **WATER LEVEL** 43 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : Trap was set at 14 inches from the maximum set depth.

SPECIES SUMMARY

COHO	222	**RB/ST**	34	**CHINOO**	2
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 3

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
3	0	0	0

No. Coho > 100 mm. 219

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
188	22	8	0

Totals	191	22	8	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 27

DATE : From : 23-Jun To : 24-Jun

TIME : From : 22:00 To : 8:30

Effort (Hrs) : 12.5 hrs. **Water T** 9

DISCHARGE : Low **WATER LEVEL** 43 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : Trap was set at 14 inches from maximun set depth.

SPECIES SUMMARY

COHO 186 **RB/ST** 24 **CHINOO** 0

DV 0 **OTHER** 0

COHO SUMMARY

No. Coho < 100 mm. 5

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
5	0	0	0

No. Coho > 100 mm. 181

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
155	17	9	0

Totals	160	17	9	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 28

DATE : From : 24-Jun To : 25-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13.0 hrs. **Water T** 11

DISCHARGE : Low **WATER LEVEL** 41 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : Trap was set 14 inches from maximum set depth.

SPECIES SUMMARY

COHO 104 **RB/ST** 19 **CHINOO** 1

DV 0 **OTHER** 1 Longnose dace
1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 6

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
6	0	0	0

No. Coho > 100 mm. 98

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
87	8	3	0

Totals				
	93	8	3	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 29

DATE : From : 25-Jun To : 26-Jun

TIME : From : 19:30 To : 8:30

Effort (Hrs) : 13 hrs. **Water T**

DISCHARGE : Low **WATER LEVEL**

(High, Moderate, Low)

COMMENTS :

Setting Depth : Trap was set at 14 inches from maximum set depth.

SPECIES SUMMARY

COHO 85 **RB/ST** 19 **CHINOO** 0

DV 0 **OTHER** 1 longnose dace

COHO SUMMARY

No. Coho < 100 mm. 4

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
3	0	0	1

No. Coho > 100 mm. 81

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
75	3	3	0

Totals	78	3	3	1

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 30

DATE : From : 26-Jun To : 27-Jun

TIME : From : 20:00 To : 9:00

Effort (Hrs) : 13 **Water T** 14

DISCHARGE : Low **WATER LEVEL** 36 cms.

(High, Moderate, Low)

COMMENTS :

Setting Depth : Trap was set at 17.5 inches from maximum set depth.

SPECIES SUMMARY

COHO	47	**RB/ST**	4	**CHINOO**	0
DV	0	**OTHER**	0		

COHO SUMMARY

No. Coho < 100 mm. 0

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
0	0	0	0

No. Coho > 100 mm. 47

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
42	4	1	0

Totals	42	4	1	0

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

DAY : 31

DATE : From : 27-Jun To : 28-Jun

TIME : From : 20:00 To : 8:00

Effort (Hrs) : 12 hrs. **Water T** 14

DISCHARGE : Low **WATER LEVEL** 33 cms.

(High, Moderate, Low)

COMMENTS : Setting Depth : Trap was set at 17.5 inches from maximum set depth.

SPECIES SUMMARY

COHO 19 **RB/ST** 2 **CHINOO** 0

DV 0 **OTHER** 1 white sucker

COHO SUMMARY

No. Coho < 100 mm. 2

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
1	0	0	1

No. Coho > 100 mm. 17

No. Adipo: Only	No. Adip. Rt. Max.	No. Right Ventral	No. Unmarked
17	0	0	0

Totals	18	0	0	1

Appendix 2. Individual fish data for fish captured during the Buck Creek Juvenile Salmon Trapping Project, May and June 2000

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000

BIOLOGICAL SAMPLING RECORDS

DAY : 1 **SAMPLE DATE :** May 22/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/RV/UM	General Comments
CH	MT	86	7.3	UM	
CH	MT	90	7.5	UM	
CH	MT	90	8	UM	
CH	MT	91	8.5	UM	
CH	MT	92	8.3	UM	
CH	MT	93	6.7	UM	
CH	MT	96	8.2	UM	
CH	MT	100	9.6	UM	
CO	MT	98	7.9	AD/RM	
CO	MT	101	9.5	AD/RM	
CO	MT	102	10	AD/RM	
CO	MT	102	9.7	AD/RM	
CO	MT	104	9.9	AD/RM	
CO	MT	104	10.2	AD/RM	
CO	MT	105	10.5	AD/RM	
CO	MT	107	11.3	AD/RM	
CO	MT	109	11.4	AD/RM	
CO	MT	110	12.3	AD/RM	
CO	MT	110	11.5	AD/RM	
CO	MT	110	12.4	AD/RM	
CO	MT	110	11.9	AD/RM	
CO	MT	110	11.5	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	113	13.3	AD/RM	
CO	MT	113	12.8	AD/RM	
CO	MT	114	13.4	AD/RM	
CO	MT	114	13.2	AD/RM	
CO	MT	117	14.7	AD/RM	
CO	MT	121	15.8	AD/RM	
CO	MT	125	18.6	AD/RM	
CO	MT	85	5.3	RV	
CO	MT	106	10.4	RV	
CO	MT	111	12.5	RV	
CO	MT	120	16.2	RV	
RBT	IM	35	0.2	UM	
RBT	**MT**	**97**	**9.4**	**UM**	SMOLT?
RBT	**MT**	**141**	**25.1**	**UM**	SMOLT?
RBT	**MT**	**145**	**32.2**	**UM**	SMOLT?
WS		130	19.6	UM	

BUCK CREEK JUVENILE TRAPPING PROGRAM 2000
BIOLOGICAL SAMPLING RECORDS

DAY : 1 **SAMPLE DATE :** May 22/00

IM = immature MT = mature (smolt) A = Adult
Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/RV/UM	General Comments
CO	MT	107	10.8	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	120	16	AD/RM	
CO	MT	100	9.4	RV	
CO	MT	120	14.4	AD/RM	
CO	MT	121	16.7	AD/RM	
RBT	IM	37	0.4	UM	
RBT	IM	39	0.4	UM	

DAY : 2 **SAMPLE DATE :** May 23/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	84	5.8	UM	
CH	MT	85	6.2	UM	
CH	MT	85	6.7	UM	
CH	MT	88	7.2	UM	
CH	MT	90	7.4	UM	
CO	MT	89	6.5	AD	
CO	MT	91	6.4	AD	
CO	MT	92	7.6	AD	
CO	MT	97	8.8	AD/RM	
CO	MT	100	9.3	AD/RM	
CO	MT	100	9.1	AD/RM	
CO	MT	101	9	AD/RM	
CO	MT	105	11.2	AD/RM	
CO	MT	105	11.3	AD/RM	
CO	MT	107	10.1	AD/RM	
CO	MT	108	11.7	AD/RM	
CO	MT	110	11.8	AD/RM	
CO	MT	110	11.3	AD/RM	
CO	MT	111	13.3	AD/RM	
CO	MT	111	13.1	AD/RM	
CO	MT	115	14.1	AD/RM	
CO	MT	115	12.2	AD/RM	
CO	MT	117	14.5	AD/RM	
CO	MT	118	14.1	AD/RM	
CO	MT	123	17.1	AD/RM	
CO	MT	94	8.4	RV	
CO	MT	97	9.5	RV	
CO	MT	107	11.2	RV	
CO	MT	111	12.1	RV	
CO	MT	102	10.6	UM	
RBT	IM	52	1.2	UM	
RBT	IM	61	2.3	UM	
RBT	IM	100	10.4	UM	
RBT	IM	101	10.9	UM	
RBT	**MT**	**115**	**15.1**	**UM**	SMOLT?
RBT	**MT**	**141**	**36.5**	**UM**	SMOLTS?
RBT	**MT**	**147**	**31.6**	**UM**	
RBT	**MT**	**160**	**39**	**UM**	SMOLT?
RBT	**MT**	**178**	**54.7**	**UM**	SMOLT?

DAY : 2 **SAMPLE DATE :** May 23/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	89	7.3	UM	
CH	MT	89	6.3	UM	
CH	MT	89	7.5	UM	
CH	MT	94	8.5	UM	
CH	MT	94	8.3	UM	
CH	MT	98	9.1	UM	
CO	MT	100	8.7	AD/RM	
CO	MT	105	10.3	AD/RM	
CO	MT	105	11.1	AD/RM	
CO	MT	105	10.8	AD/RM	
CO	MT	106	10.6	AD/RM	
CO	MT	108	11.2	AD/RM	
CO	MT	111	13.5	AD/RM	
CO	MT	111	12.1	AD/RM	
CO	MT	112	13.4	AD/RM	
CO	MT	114	13.7	AD/RM	
CO	MT	114	13.2	AD/RM	
CO	MT	115	12.5	AD/RM	
CO	MT	116	14.8	AD/RM	
CO	MT	118	15.9	AD/RM	
CO	MT	93	7.5	RV	
CO	MT	108	10.1	RV	
CO	MT	91	8	UM	
CO	MT	92	8.3	UM	
LNC	IM	39	0.5	UM	
LNC	IM	45	0.6	UM	
RBT	IM	38	0.4	UM	
RBT	IM	49	0.9	UM	
RBT	MT	135	30.6	UM	
RBT	MT	145	26.3	UM	

DAY : 3 **SAMPLE DATE :** May 24/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	IM	80	5.6	UM	TOP CAUDAL
CH	MT	98	9.8	UM	TOP CAUDAL
CH	MT	100	10.8	UM	TOP CAUDAL
CO	MT	84	5.5	AD	TOP CAUDAL
CO	MT	90	7.3	AD	TOP CAUDAL
CO	MT	101	11	AD	TOP CAUDAL
CO	MT	90	6.7	AD/RM	TOP CAUDAL
CO	MT	99	8.5	AD/RM	TOP CAUDAL
CO	MT	102	9.6	AD/RM	TOP CAUDAL
CO	MT	103	9.9	AD/RM	TOP CAUDAL
CO	MT	105	10.1	AD/RM	TOP CAUDAL
CO	MT	106	11	AD/RM	TOP CAUDAL
CO	MT	106	10.3	AD/RM	TOP CAUDAL
CO	MT	110	11.7	AD/RM	TOP CAUDAL
CO	MT	111	11.7	AD/RM	TOP CAUDAL
CO	MT	112	12.4	AD/RM	TOP CAUDAL
CO	MT	112	12.7	AD/RM	TOP CAUDAL
CO	MT	115	13.4	AD/RM	TOP CAUDAL
CO	MT	115	14.4	AD/RM	TOP CAUDAL
CO	MT	116	14.1	AD/RM	TOP CAUDAL
CO	MT	125	17.7	AD/RM	TOP CAUDAL
CO	MT	102	9.7	RV	TOP CAUDAL
RBT	MT	46	3.2	UM	
RBT	MT	65	2.8	UM	
RBT	MT	146	31.5	UM	
RBT	MT	166	37.7	UM	
WHS	IM	44	0.7	UM	
					THESE 22 TOP CAUDAL CLIPPED
					FISH WERE RELEASED D/S OF THE
					RST AS WE COULDN'T MARK
					ENOUGH TO DO AN EFFICIENCY TEST

DAY : 4 **SAMPLE DATE :** May 31/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	83	6.3	UM	
CO	MT	104	10.6	AD	
CO	MT	99	9.4	AD/RM	
CO	MT	99	8.7	AD/RM	
CO	MT	100	8.4	AD/RM	
CO	MT	104	10.2	AD/RM	
CO	MT	107	11.1	AD/RM	
CO	MT	109	11.5	AD/RM	
CO	MT	110	11.8	AD/RM	
CO	MT	111	12.3	AD/RM	
CO	MT	112	12.1	AD/RM	
CO	MT	116	13.7	AD/RM	
CO	MT	117	14	AD/RM	
CO	MT	118	15.1	AD/RM	
CO	MT	120	15	AD/RM	
CO	MT	125	18.7	AD/RM	
lampreys					23 LAMPREY TODAY
LNC	IM	43	0.6	UM	
LNC	IM	65	2.4	UM	
RBT	IM	58	1.9	UM	
RBT	IM	59	2	UM	
RBT	IM	65	2.7	UM	
RBT	IM	104	11.3	UM	smolt scale sample taken #3
RBT	IM	104	11.6	UM	
RBT	IM	109	14.1	UM	smolt scale sample taken #8
RBT	IM	116	15.5	UM	smolt scale sample taken #6
RBT	MT	125	21	UM	
RBT	MT	126	20.6	UM	smolt scale sample taken #4
RBT	MT	135	25.1	UM	smolt scale sample taken #2
RBT	MT	140	26.4	UM	smolt
RBT	MT	141	29.8	UM	smolt scale sample taken #1(bk 51395)
RBT	MT	145	31.5	UM	
RBT	MT	151	33.7	UM	smolt scale sample taken #7
RBT	MT	160	40.1	UM	
RBT	MT	171	44.2	UM	smolt scale sample taken #5

DAY : 5 **SAMPLE DATE :** June 1/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	83	6.6	UM	
CH	MT	90	7.8	UM	
CH	MT	92	8.6	UM	
CH	MT	92	8.1	UM	
CH	MT	95	9.4	UM	
CH	MT	100	10.3	UM	
CH	MT	100	9.7	UM	
CH	MT	101	11	UM	
CO	MT	95	7.6	AD	
CO	MT	97	8.5	AD	
CO	MT	106	11.1	AD	
CO	MT	117	16.3	AD	possible 3 year old smolt?
CO	MT	101	8.7	AD/RM	
CO	MT	102	10.1	AD/RM	
CO	MT	102	11.1	AD/RM	
CO	MT	102	9.9	AD/RM	
CO	MT	105	11	AD/RM	
CO	MT	105	10.6	AD/RM	
CO	MT	108	11.6	AD/RM	
CO	MT	108	11.5	AD/RM	
CO	MT	108	12.3	AD/RM	
CO	MT	110	11	AD/RM	
CO	MT	112	13	AD/RM	
CO	MT	112	12.2	AD/RM	
CO	MT	112	12.7	AD/RM	deformed caudal
CO	MT	112	12.5	AD/RM	
CO	MT	112	13.8	AD/RM	
CO	MT	113	14.4	AD/RM	
CO	MT	113	13.9	AD/RM	
CO	MT	114	9.9	AD/RM	
CO	MT	115	12.9	AD/RM	Top caudal erosion
CO	MT	120	15	AD/RM	
CO	MT	124	15.9	AD/RM	
CO	MT	126	17.5	AD/RM	
CO	MT	112	13.1	RV	
lamprey					19 lamprey caught
RBT	IM	56	1.4	UM	
RBT	IM	63	2.5	UM	
RBT	IM	91	7.5	UM	
RBT	IM	109	13.3	UM	scale samples taken #14
RBT	IM	111	15.7	UM	scale samples taken #16
RBT	IM	128	21.4	UM	scale samples taken #9
RBT	MT	131	22.6	UM	scale samples taken #15
RBT	MT	144	26.9	UM	scale samples taken #13
RBT	MT	148	29.7	UM	scale samples taken #10
RBT	MT	165	44.8	UM	scale samples taken #12
RBT	MT	171	57.2	UM	scale samples taken #11

DAY : 6 **SAMPLE DATE :** June 2/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	86	6.6	UM	
CH	MT	88	7.2	UM	
CH	MT	88	7.3	UM	
CH	MT	96	9.8	UM	
CH	MT	98	9.1	UM	
CO	MT	95	7.8	AD	
CO	MT	100	9.9	AD	
CO	MT	105	11	AD	
CO	MT	106	11.1	AD	
CO	MT	106	10.6	AD	
CO	MT	109	11.3	AD	
CO	MT	106	10.4	AD/RM	
CO	MT	108	11.1	AD/RM	
CO	MT	109	11.7	AD/RM	
CO	MT	109	12.5	AD/RM	
CO	MT	109	11.2	AD/RM	
CO	MT	110	11.8	AD/RM	
CO	MT	110	11.4	AD/RM	
CO	MT	111	11.4	AD/RM	
CO	MT	112	16	AD/RM	
CO	MT	113	12.8	AD/RM	
CO	MT	115	14.5	AD/RM	
CO	MT	108	11.5	RV	
CO	MT	111	12	RV	
lamprey					19 lamprey caught
LNC	IM	47	1	UM	
LNC	IM	66	2.7	UM	
RBT	IM	61	2.1	UM	
RBT	IM	101	10.6	UM	
RBT	IM	106	10.8	UM	
RBT	MT	120	18	UM	scale samples taken #23
RBT	MT	126	19.2	UM	scale samples taken #21
RBT	MT	141	24.6	UM	scale samples taken #19
RBT	MT	146	30.7	UM	scale samples taken #26
RBT	MT	150	35.2	UM	scale samples taken #24
RBT	MT	154	35.1	UM	scale samples taken #25
RBT	MT	158	36.4	UM	scale samples taken #22
RBT	MT	166	44.4	UM	scale samples taken #20
RBT	MT	170	51.5	UM	scale samples taken #17
RBT	MT	196	82.5	UM	scale samples taken #18

DAY : 7 **SAMPLE DATE :** June 3/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	92	9	UM	
CH	MT	95	8.9	UM	
CH	MT	95	9.3	UM	
CH	MT	96	9.4	UM	
CH	MT	99	9.9	UM	
CO	MT	98	9.7	AD	
CO	MT	99	9.6	AD	
CO	MT	101	9.6	AD	
CO	MT	101	10	AD/RM	
CO	MT	106	10.9	AD/RM	
CO	MT	109	11.4	AD/RM	
CO	MT	110	13	AD/RM	
CO	MT	111	12.7	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	114	11.2	AD/RM	
CO	MT	118	14.6	AD/RM	
CO	MT	124	17.5	AD/RM	
CO	MT	97	8.6	RV	
CO	MT	115	14	RV	
lamprey					13 lamprey caught
RBT	IM	110	14.1	UM	scale samples taken #31
RBT	IM	115	17.6	UM	scale samples taken #30
RBT	IM	130	23.9	UM	scale samples taken #27
RBT	IM	131	22.1	UM	scale samples taken #29
RBT	MT	142	27.2	UM	scale samples taken #28
RBT	MT	151	34.4	UM	scale samples taken #32
WHS	IM	136	25.9	UM	

DAY : 8 **SAMPLE DATE :** June 4/00

IM = immature MT = mature (smolt) A = Adult
Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	135	27	LV	
CH	MT	85	6.4	UM	
CH	MT	88	7.4	UM	
CH	MT	89	7.7	UM	
CH	MT	91	8.7	UM	
CH	MT	91	8.5	UM	
CH	MT	92	9.3	UM	
CH	MT	92	8.3	UM	
CH	MT	92	8.1	UM	
CH	MT	96	9.4	UM	
CH	MT	100	10.6	UM	
CH	MT	101	11.2	UM	
CH	MT	104	12.9	UM	
CH	MT	108	13.4	UM	
CO	MT	95	8.1	AD	
CO	MT	97	8.9	AD	
CO	MT	99	9	AD	
CO	MT	106	11.3	AD	
CO	MT	122	18.8	AD	
CO	MT	126	18.4	AD	
CO	MT	105	10	AD/RM	
CO	MT	109	11.3	AD/RM	
CO	MT	110	11.9	AD/RM	
CO	MT	110	11.9	AD/RM	
CO	MT	110	12.1	AD/RM	
CO	MT	110	13	AD/RM	
CO	MT	111	13.2	AD/RM	
CO	MT	113	13.3	AD/RM	
CO	MT	115	14.8	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.4	AD/RM	
CO	MT	116	14.4	AD/RM	
CO	MT	119	14.1	AD/RM	
CO	MT	121	17.5	AD/RM	
CO	MT	96	9	RV	
CO	MT	112	12.9	RV	
Lamprey					18 lamprey caught
RBT	IM	64	2.3	UM	
RBT	MT	74	4.1	UM	should this be IM instead of MT?
RBT	IM	100	10.9	UM	caudal erosion
RBT	IM	113	15.4	UM	caudal erosion
RBT	MT	118	17.3	UM	scale samples taken #38
RBT	MT	122	19	UM	scale samples taken #42
RBT	MT	123	19	UM	scale samples taken #40
RBT	MT	128	23.3	UM	scale samples taken #39
RBT	MT	129	21.8	UM	scale samples taken #37
RBT	MT	142	28.7	UM	scale samples taken #35
RBT	MT	145	32.8	UM	scale samples taken #36/sexually mature
RBT	MT	157	36.2	UM	scale samples taken #34
RBT	MT	170	45	UM	scale samples taken #33
RBT	MT	190	62.4	UM	scale samples taken #41

DAY : 9 **SAMPLE DATE :** June 5/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	89	7.4	UM	
CH	MT	89	7.5	UM	
CH	MT	91	8.7	UM	
CH	MT	92	9.1	UM	
CH	MT	95	8.8	UM	
CH	MT	95	9.6	UM	
CH	MT	95	9.1	UM	
CH	MT	100	10.7	UM	
CH	MT	100	10.6	UM	
CH	MT	114	11.7	UM	
CO	MT	101	10.9	AD	
CO	MT	103	11.1	AD	
CO	MT	106	11.7	AD	
CO	MT	110	12.1	AD	
CO	MT	120	17.8	AD	3 YR. OLD?
CO	MT	121	18.5	AD	3 YR. OLD?
CO	MT	105	9.6	AD/RM	
CO	MT	106	10.9	AD/RM	
CO	MT	106	10.4	AD/RM	
CO	MT	110	11.4	AD/RM	
CO	MT	110	13.2	AD/RM	
CO	MT	112	11.6	AD/RM	
CO	MT	114	13.3	AD/RM	
CO	MT	115	12.9	AD/RM	
CO	MT	115	14.4	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.7	AD/RM	
CO	MT	116	13.8	AD/RM	
CO	MT	116	13.6	AD/RM	
CO	MT	116	14.4	AD/RM	
CO	MT	118	15.4	AD/RM	
CO	MT	118	14.3	AD/RM	
CO	MT	119	14.7	AD/RM	
CO	MT	119	15	AD/RM	
CO	MT	120	14.5	AD/RM	
CO	MT	120	13.9	AD/RM	
CO	MT	121	16.2	AD/RM	
CO	MT	121	16	AD/RM	
CO	MT	125	19.7	AD/RM	
CO	MT	110	12.9	RM only	
CO	MT	92	8.2	RV	
CO	MT	109	11.4	RV	
RBT	IM	105	12.4	UM	scale samples taken #45
RBT	IM	109	12.8	UM	
RBT	IM	109	13.4	UM	
RBT	IM	110	13.7	UM	scale samples taken #50
RBT	IM	115	16.5	UM	scale samples taken #44
RBT	MT	122	20	UM	scale samples taken #49
RBT	MT	124	18.6	UM	
RBT	MT	138	27	UM	scale samples taken #48
RBT	MT	141	27.5	UM	
RBT	MT	146	30.7	UM	
RBT	MT	159	39.5	UM	
RBT	MT	161	39.3	UM	
RBT	MT	168	45.4	UM	scale samples taken #46
RBT	MT	171	49.5	UM	scale samples taken #47
RBT	MT	181	62.7	UM	scale samples taken #43
WHS	IM	55	1.8	UM	

DAY : 10 **SAMPLE DATE :** June 6/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	90	7.7	UM	
CH	MT	91	8.4	UM	
CH	MT	92	8.4	UM	
CH	MT	95	9.7	UM	
CH	MT	96	9.3	UM	
CH	MT	105	12.2	UM	
CO	MT	91	7.2	AD	
CO	MT	94	7.6	AD	
CO	MT	100	9.6	AD	
CO	MT	102	9.6	AD	
CO	MT	105	11	AD	
CO	MT	105	10.6	AD	
CO	MT	105	10.9	AD	
CO	MT	108	12.9	AD	
CO	MT	116	14.7	AD	
CO	MT	118	16.9	AD	
CO	MT	104	10.3	AD/RM	
CO	MT	106	10.4	AD/RM	
CO	MT	106	10.8	AD/RM	
CO	MT	106	11.2	AD/RM	
CO	MT	108	11.4	AD/RM	
CO	MT	108	11	AD/RM	
CO	MT	109	11.5	AD/RM	
CO	MT	109	12.6	AD/RM	
CO	MT	109	11.9	AD/RM	
CO	MT	110	12.5	AD/RM	
CO	MT	110	13.2	AD/RM	
CO	MT	110	12.4	AD/RM	
CO	MT	110	12.7	AD/RM	
CO	MT	110	12.7	AD/RM	
CO	MT	111	14	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	111	12.6	AD/RM	
CO	MT	111	12.3	AD/RM	
CO	MT	111	13.2	AD/RM	
CO	MT	112	13.4	AD/RM	
CO	MT	112	13.4	AD/RM	
CO	MT	112	13.2	AD/RM	
CO	MT	112	12	AD/RM	
CO	MT	113	12.9	AD/RM	
CO	MT	114	12.9	AD/RM	
CO	MT	114	15	AD/RM	
CO	MT	114	13.6	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	114	13.9	AD/RM	
CO	MT	114	14.1	AD/RM	
CO	MT	115	14.3	AD/RM	
CO	MT	115	14.1	AD/RM	
CO	MT	115	14.5	AD/RM	
CO	MT	115	14.9	AD/RM	
CO	MT	116	14.4	AD/RM	
CO	MT	116	13.6	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	118	14.8	AD/RM	
CO	MT	118	15.9	AD/RM	
CO	MT	119	15	AD/RM	
CO	MT	120	16.8	AD/RM	
CO	MT	121	18.3	AD/RM	
CO	MT	121	16.8	AD/RM	
CO	MT	110	13.4	RV	
CO	MT	112	13.3	RV	
CO	MT	113	11.1	RV	
CO	MT	125	19.9	RV	
Lamprey					
RBT	IM	55	1.7	UM	
RBT	IM	65	2.7	UM	
RBT	IM	86	6.5	UM	
RBT	IM	109	14	UM	
RBT	IM	116	15.2	UM	
RBT	IM	120	20.5	UM	
RBT	IM	125	21.6	UM	
RBT	IM	126	22.6	UM	
RBT	MT	148	33.9	UM	
RBT	MT	150	34.1	UM	
RBT	MT	155	38.1	UM	
RBT	MT	156	40.5	UM	
RBT	MT	162	44	UM	
RBT	MT	164	44.2	UM	
RBT	MT	168	74.2	UM	
RBT	MT	181	53.6	UM	
WHS	IM	159	40.9	UM	

DAY : 11 **SAMPLE DATE :** June 7/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	92	8.5	UM	
CH	MT	92	9.6	UM	
CH	MT	93	8.7	UM	
CH	MT	96	9.4	UM	
CH	MT	96	10.1	UM	
CH	MT	100	11.4	UM	
CH	MT	100	10.4	UM	
CH	MT	100	10.5	UM	
CH	MT	101	11.9	UM	
CH	MT	104	12.2	UM	
CH	MT	110	15.2	UM	
CO	MT	96	8.7	AD	
CO	MT	96	9.6	AD	
CO	MT	98	9	AD	
CO	MT	99	9.7	AD	
CO	MT	100	9.2	AD	
CO	MT	100	9.1	AD	
CO	MT	100	10.1	AD	
CO	MT	101	9.7	AD	
CO	MT	102	9.4	AD	
CO	MT	103	10.3	AD	
CO	MT	103	10.5	AD	
CO	MT	105	10.5	AD	
CO	MT	105	12.2	AD	
CO	MT	107	11.4	AD	
CO	MT	108	11.8	AD	
CO	MT	108	12	AD	
CO	MT	108	12.3	AD	
CO	MT	109	11.7	AD	
CO	MT	109	12.2	AD	
CO	MT	110	13.1	AD	
CO	MT	115	13.3	AD	
CO	MT	119	17.4	AD	Recapture
CO	MT	105	10.9	AD/RM	
CO	MT	107	10.2	AD/RM	Recapture
CO	MT	107	11.6	AD/RM	
CO	MT	108	11.1	AD/RM	
CO	MT	108	11.8	AD/RM	
CO	MT	110	13.3	AD/RM	
CO	MT	110	11.3	AD/RM	
CO	MT	110	11.5	AD/RM	
CO	MT	110	12.8	AD/RM	
CO	MT	110	12.8	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	111	12.9	AD/RM	
CO	MT	111	12.9	AD/RM	
CO	MT	111	13.3	AD/RM	
CO	MT	111	13.8	AD/RM	
CO	MT	111	12.9	AD/RM	
CO	MT	112	10.3	AD/RM	
CO	MT	112	12.7	AD/RM	
CO	MT	112	12.7	AD/RM	
CO	MT	112	13.3	AD/RM	
CO	MT	112	12.9	AD/RM	
CO	MT	112	12.4	AD/RM	
CO	MT	113	12.6	AD/RM	
CO	MT	113	12.9	AD/RM	
CO	MT	114	13.6	AD/RM	
CO	MT	115	13.1	AD/RM	
CO	MT	115	14	AD/RM	
CO	MT	115	13.5	AD/RM	
CO	MT	115	13.9	AD/RM	
CO	MT	115	14.8	AD/RM	
CO	MT	115	14.2	AD/RM	
CO	MT	115	13.7	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	116	15.5	AD/RM	
CO	MT	116	15	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	13.6	AD/RM	
CO	MT	116	14.2	AD/RM	
CO	MT	116	14.6	AD/RM	
CO	MT	116	14.7	AD/RM	
CO	MT	116	13.8	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	117	15.5	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	118	15.8	AD/RM	Recapture
CO	MT	118	15.7	AD/RM	
CO	MT	118	15.8	AD/RM	
CO	MT	118	14.5	AD/RM	
CO	MT	118	15	AD/RM	
CO	MT	118	15.4	AD/RM	
CO	MT	119	15.7	AD/RM	
CO	MT	119	14.8	AD/RM	
CO	MT	120	16	AD/RM	
CO	MT	120	17.4	AD/RM	
CO	MT	120	15.1	AD/RM	
CO	MT	120	15.7	AD/RM	
CO	MT	120	16.6	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	108	12.8	RV	
CO	MT	110	13.1	RV	
CO	MT	111	12.4	RV	
CO	MT	116	14.2	RV	
CO	MT	125	18.4	RV	
CO	MT	114	15.7	UM	
Lamprey					
LNC	MT	71	4	UM	
RBT	IM	62	2.6	UM	
RBT	IM	91	7.5	UM	
RBT	IM	98	10	UM	
RBT	IM	104	11.5	UM	
RBT	IM	106	12.1	UM	
RBT	IM/MT/A	107	12.2	UM	
RBT	IM	107	12.8	UM	
RBT	IM	112	14.3	UM	
RBT	IM	115	14	UM	
RBT	MT	148	32.2	UM	
RBT	MT	150	32.2	UM	
RBT	MT	152	36.2	UM	
RBT	MT	154	38.7	UM	
RBT	MT	158	33.8	UM	
RBT	MT	164	39.8	UM	
RBT	MT	176	54	UM	

DAY : 12 **SAMPLE DATE :** June 8/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CH	MT	89	7.8	UM	
CH	MT	98	9.5	UM	
CH	MT	100	10.9	UM	
CH	MT	100	9.8	UM	
CH	MT	101	9.6	UM	
CH	MT	102	11.5	UM	
CH	MT	102	11.5	UM	
CH	MT	113	16.3	UM	
CO	MT	91	7.2	AD	
CO	MT	92	8.4	AD	
CO	MT	92	7.3	AD	
CO	MT	95	8	AD	
CO	MT	95	8.7	AD	
CO	MT	95	8.2	AD	
CO	MT	96	8.2	AD	
CO	MT	96	8.3	AD	
CO	MT	96	9.4	AD	
CO	MT	97	8.4	AD	
CO	MT	97	9	AD	
CO	MT	98	8.7	AD	
CO	MT	98	9.2	AD	
CO	MT	98	9.4	AD	
CO	MT	98	9.5	AD	
CO	MT	99	9.5	AD	
CO	MT	99	9.1	AD	
CO	MT	99	8.7	AD	
CO	MT	99	9.4	AD	
CO	MT	99	9	AD	
CO	MT	99	9.3	AD	
CO	MT	100	9.3	AD	
CO	MT	100	9.7	AD	
CO	MT	100	9.3	AD	
CO	MT	100	10.4	AD	
CO	MT	100	9.8	AD	
CO	MT	101	10.2	AD	
CO	MT	101	9.4	AD	
CO	MT	101	9.5	AD	
CO	MT	101	9.4	AD	
CO	MT	101	8.8	AD	
CO	MT	101	9.7	AD	
CO	MT	102	10.8	AD	
CO	MT	103	10.2	AD	
CO	MT	103	10.4	AD	
CO	MT	104	9.9	AD	
CO	MT	104	10.6	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	104	11.1	AD	
CO	MT	105	11.1	AD	
CO	MT	106	10.3	AD	
CO	MT	106	11.3	AD	
CO	MT	106	12.2	AD	
CO	MT	106	11.1	AD	
CO	MT	106	11.2	AD	
CO	MT	107	11.8	AD	
CO	MT	108	12	AD	
CO	MT	108	12	AD	
CO	MT	108	13.1	AD	
CO	MT	109	12.3	AD	
CO	MT	111	12.5	AD	
CO	MT	111	13.5	AD	
CO	MT	111	13	AD	
CO	MT	112	10.3	AD	
CO	MT	118	16.2	AD	
CO	MT	100	10.1	AD/RM	
CO	MT	104	8.6	AD/RM	
CO	MT	104	10.4	AD/RM	
CO	MT	105	10.1	AD/RM	
CO	MT	105	10.7	AD/RM	
CO	MT	105	10.8	AD/RM	
CO	MT	105	10.1	AD/RM	
CO	MT	105	10.8	AD/RM	
CO	MT	106	11	AD/RM	
CO	MT	106	10.5	AD/RM	
CO	MT	106	11	AD/RM	
CO	MT	106	11.1	AD/RM	
CO	MT	106	10.4	AD/RM	
CO	MT	106	10.9	AD/RM	
CO	MT	107	10.9	AD/RM	
CO	MT	107	11.6	AD/RM	
CO	MT	108	11.7	AD/RM	
CO	MT	108	11.5	AD/RM	
CO	MT	108	11.8	AD/RM	
CO	MT	108	11.7	AD/RM	
CO	MT	108	11	AD/RM	
CO	MT	109	11.5	AD/RM	
CO	MT	109	11	AD/RM	
CO	MT	109	12.4	AD/RM	
CO	MT	109	11.7	AD/RM	
CO	MT	110	12.6	AD/RM	
CO	MT	110	11.2	AD/RM	
CO	MT	110	12.6	AD/RM	
CO	MT	110	12	AD/RM	
CO	MT	110	12	AD/RM	
CO	MT	110	11.7	AD/RM	
CO	MT	110	12.1	AD/RM	
CO	MT	110	12.6	AD/RM	
CO	MT	110	12.3	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	111	11.8	AD/RM	
CO	MT	111	13.3	AD/RM	
CO	MT	111	12.6	AD/RM	
CO	MT	111	12.2	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	111	12.1	AD/RM	
CO	MT	111	13.3	AD/RM	
CO	MT	111	12	AD/RM	
CO	MT	111	12.4	AD/RM	
CO	MT	111	12.4	AD/RM	
CO	MT	111	12.3	AD/RM	
CO	MT	112	11.9	AD/RM	
CO	MT	112	12.8	AD/RM	
CO	MT	112	12.8	AD/RM	
CO	MT	112	13.4	AD/RM	
CO	MT	112	12.9	AD/RM	
CO	MT	112	12.3	AD/RM	
CO	MT	112	13.4	AD/RM	
CO	MT	113	12.3	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	113	13.1	AD/RM	
CO	MT	113	13	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	113	13.1	AD/RM	
CO	MT	114	14.3	AD/RM	
CO	MT	114	13.7	AD/RM	
CO	MT	114	13.6	AD/RM	
CO	MT	114	12.9	AD/RM	
CO	MT	115	13.4	AD/RM	
CO	MT	115	14.1	AD/RM	
CO	MT	115	13.2	AD/RM	
CO	MT	115	14.7	AD/RM	
CO	MT	115	14.1	AD/RM	
CO	MT	115	13.9	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	14.2	AD/RM	
CO	MT	115	14.3	AD/RM	
CO	MT	115	14.4	AD/RM	
CO	MT	115	14.7	AD/RM	
CO	MT	115	15.4	AD/RM	
CO	MT	115	13.3	AD/RM	
CO	MT	115	13.9	AD/RM	
CO	MT	116	14.8	AD/RM	Recapture
CO	MT	116	14.7	AD/RM	
CO	MT	116	14	AD/RM	
CO	MT	116	14	AD/RM	
CO	MT	116	13.9	AD/RM	
CO	MT	116	15	AD/RM	
CO	MT	116	13.9	AD/RM	
CO	MT	116	14.2	AD/RM	
CO	MT	116	14	AD/RM	
CO	MT	116	15	AD/RM	
CO	MT	116	14.2	AD/RM	
CO	MT	116	14.7	AD/RM	
CO	MT	117	15.7	AD/RM	
CO	MT	118	15.1	AD/RM	
CO	MT	119	15.3	AD/RM	
CO	MT	119	16.2	AD/RM	
CO	MT	120	14.9	AD/RM	
CO	MT	120	16	AD/RM	
CO	MT	120	16.1	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	120	15.6	AD/RM	
CO	MT	120	16.3	AD/RM	
CO	MT	121	16.7	AD/RM	
CO	MT	121	16	AD/RM	
CO	MT	121	16.9	AD/RM	
CO	MT	125	17.2	AD/RM	
CO	MT	128	19.4	AD/RM	
CO	MT	130	19.9	AD/RM	
CO	MT	131	22.1	AD/RM	
CO	MT	117	14.9	RM	
CO	MT	102	9.6	RV	
CO	MT	104	9.6	RV	
CO	MT	105	10.2	RV	
CO	MT	110	11.6	RV	
CO	MT	110	12	RV	
CO	MT	111	12.6	RV	
RBT	IM	107	12.4	UM	
RBT	IM	116	16.4	UM	
RBT	IM	118	16.7	UM	
RBT	IM	127	19	UM	
RBT	IM	128	21.3	UM	
RBT	IM	131	21.7	UM	
RBT	IM	131	22	UM	
RBT	IM	134	24.5	UM	
RBT	MT	145	28	UM	
RBT	MT	146	32.4	UM	
RBT	MT	154	34.9	UM	
RBT	MT	156	40.7	UM	
RBT	MT	161	38.2	UM	
RBT	MT	162	43.1	UM	
RBT	MT	167	45.2	UM	
RBT	MT	169	50	UM	
WHS	IM	126	21.4	UM	

DAY : 13 **SAMPLE DATE :** June 9/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	91	8.5	UM	
CH	MT	94	8.7	UM	
CH	MT	96	9.5	UM	
CH	MT	96	10	UM	
CH	MT	97	10.3	UM	
CH	MT	99	10.1	UM	
CH	MT	99	9.2	UM	
CH	MT	101	11.8	UM	
CH	MT	101	10.8	UM	
CH	MT	101	9.7	UM	
CH	MT	104	12.6	UM	
CH	MT	106	13.5	UM	
CH	MT	106	12.8	UM	
CH	MT	110	14.1	UM	
CH	MT	115	15.4	UM	
CO	MT	85	6.2	AD	
CO	MT	91	8	AD	
CO	MT	92	7.7	AD	
CO	MT	92	8	AD	
CO	MT	93	7.9	AD	
CO	MT	93	7.6	AD	
CO	MT	95	8.3	AD	
CO	MT	95	9.1	AD	
CO	MT	95	8.4	AD	
CO	MT	95	8.3	AD	
CO	MT	95	8.8	AD	
CO	MT	96	8.6	AD	
CO	MT	96	8.3	AD	
CO	MT	96	7.9	AD	
CO	MT	97	8.6	AD	
CO	MT	97	8.9	AD	
CO	MT	97	9.1	AD	
CO	MT	97	8.3	AD	
CO	MT	97	8.6	AD	
CO	MT	99	9.7	AD	
CO	MT	99	9.6	AD	
CO	MT	99	8.8	AD	
CO	MT	100	9.5	AD	
CO	MT	100	11.2	AD	
CO	MT	100	9.6	AD	
CO	MT	101	10.2	AD	
CO	MT	101	10.4	AD	
CO	MT	101	10.6	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	101	9.8	AD	
CO	MT	101	9.8	AD	
CO	MT	101	9.7	AD	
CO	MT	101	8.8	AD	
CO	MT	101	10.4	AD	
CO	MT	101	9.6	AD	
CO	MT	102	10.7	AD	
CO	MT	102	10	AD	
CO	MT	102	10.3	AD	
CO	MT	102	10.2	AD	
CO	MT	102	11.5	AD	
CO	MT	103	11.1	AD	
CO	MT	104	11.6	AD	
CO	MT	104	10.8	AD	
CO	MT	104	11	AD	
CO	MT	104	10.2	AD	
CO	MT	104	10.3	AD	
CO	MT	106	12	AD	
CO	MT	106	11.3	AD	
CO	MT	106	11.2	AD	
CO	MT	106	11.7	AD	
CO	MT	107	11.7	AD	
CO	MT	108	12.1	AD	
CO	MT	108	11.4	AD	
CO	MT	109	12.7	AD	
CO	MT	109	12.4	AD	
CO	MT	110	11.5	AD	
CO	MT	110	12.7	AD	
CO	MT	110	12.3	AD	
CO	MT	110	13.7	AD	
CO	MT	110	12.6	AD	
CO	MT	112	13.5	AD	
CO	MT	113	14.3	AD	
CO	MT	115	10.7	AD	
CO	MT	116	14.7	AD	
CO	MT	116	15.2	AD	
CO	MT	117	15.5	AD	
CO	MT	121	17	AD	
CO	MT	101	9.6	AD/RM	
CO	MT	103	9.5	AD/RM	
CO	MT	103	9.9	AD/RM	
CO	MT	104	13.4	AD/RM	
CO	MT	104	9.9	AD/RM	
CO	MT	105	11.2	AD/RM	
CO	MT	105	13.8	AD/RM	
CO	MT	106	11.1	AD/RM	
CO	MT	106	10.6	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	106	11.3	AD/RM	
CO	MT	106	12.2	AD/RM	
CO	MT	106	11.1	AD/RM	
CO	MT	106	10.8	AD/RM	
CO	MT	107	11.7	AD/RM	
CO	MT	107	11.4	AD/RM	
CO	MT	107	10.8	AD/RM	
CO	MT	107	10.9	AD/RM	
CO	MT	107	11.6	AD/RM	
CO	MT	108	11.4	AD/RM	
CO	MT	108	11.2	AD/RM	Recapture
CO	MT	108	11.6	AD/RM	
CO	MT	108	10.8	AD/RM	
CO	MT	108	12.1	AD/RM	
CO	MT	108	11.7	AD/RM	
CO	MT	108	12	AD/RM	
CO	MT	109	12.3	AD/RM	
CO	MT	109	12.4	AD/RM	
CO	MT	109	11.5	AD/RM	
CO	MT	109	11.9	AD/RM	
CO	MT	109	12.4	AD/RM	
CO	MT	109	12.8	AD/RM	
CO	MT	109	12.3	AD/RM	
CO	MT	109	12.1	AD/RM	
CO	MT	109	12.1	AD/RM	
CO	MT	110	11.2	AD/RM	
CO	MT	110	13	AD/RM	
CO	MT	110	12.5	AD/RM	
CO	MT	110	12	AD/RM	
CO	MT	110	11.7	AD/RM	
CO	MT	110	12.8	AD/RM	
CO	MT	110	11.8	AD/RM	
CO	MT	110	12.6	AD/RM	
CO	MT	110	12.4	AD/RM	
CO	MT	110	13.1	AD/RM	
CO	MT	110	12.7	AD/RM	
CO	MT	110	11.5	AD/RM	
CO	MT	110	12.3	AD/RM	
CO	MT	110	12.3	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	111	12.4	AD/RM	
CO	MT	111	13.4	AD/RM	
CO	MT	111	12.3	AD/RM	
CO	MT	111	12.1	AD/RM	
CO	MT	111	12.8	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	112	12.8	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	112	13.7	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	112	13.5	AD/RM	
CO	MT	112	12.9	AD/RM	
CO	MT	112	14.4	AD/RM	
CO	MT	112	14.3	AD/RM	
CO	MT	112	13	AD/RM	
CO	MT	112	13.8	AD/RM	
CO	MT	112	12.7	AD/RM	
CO	MT	112	12.8	AD/RM	
CO	MT	112	13.8	AD/RM	
CO	MT	112	11.6	AD/RM	
CO	MT	112	13.2	AD/RM	
CO	MT	113	13	AD/RM	
CO	MT	113	12.9	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	113	14.4	AD/RM	
CO	MT	113	12.9	AD/RM	
CO	MT	113	12.9	AD/RM	
CO	MT	114	13.5	AD/RM	
CO	MT	114	14	AD/RM	
CO	MT	115	16.1	AD/RM	
CO	MT	115	15.1	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	14.9	AD/RM	
CO	MT	115	15.1	AD/RM	
CO	MT	115	14.2	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.8	AD/RM	
CO	MT	115	13.3	AD/RM	
CO	MT	115	13.3	AD/RM	
CO	MT	115	13.9	AD/RM	
CO	MT	116	14.3	AD/RM	
CO	MT	116	15.5	AD/RM	
CO	MT	116	15.3	AD/RM	
CO	MT	116	13.3	AD/RM	
CO	MT	116	16	AD/RM	
CO	MT	116	14.9	AD/RM	
CO	MT	117	14.9	AD/RM	
CO	MT	117	15	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	117	14.6	AD/RM	
CO	MT	117	13.3	AD/RM	
CO	MT	118	16.3	AD/RM	
CO	MT	118	15.2	AD/RM	
CO	MT	118	15.8	AD/RM	
CO	MT	118	14.2	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	118	16.1	AD/RM	
CO	MT	118	15.5	AD/RM	
CO	MT	119	16.1	AD/RM	
CO	MT	119	16.2	AD/RM	
CO	MT	119	15.4	AD/RM	
CO	MT	120	16.8	AD/RM	
CO	MT	120	16.6	AD/RM	
CO	MT	120	14.7	AD/RM	
CO	MT	120	14.3	AD/RM	
CO	MT	121	17.2	AD/RM	
CO	MT	121	16.5	AD/RM	
CO	MT	121	15.8	AD/RM	
CO	MT	121	16.3	AD/RM	
CO	MT	122	17.1	AD/RM	
CO	MT	122	18.1	AD/RM	
CO	MT	124	17.4	AD/RM	
CO	MT	125	19.7	AD/RM	
CO	MT	86	8.5	RV	
CO	MT	99	8.4	RV	
CO	MT	100	8.6	RV	
CO	MT	102	9.7	RV	
CO	MT	104	9.9	RV	
CO	MT	105	10.4	RV	
CO	MT	106	10.8	RV	
CO	MT	106	12.1	RV	
CO	MT	107	11.1	RV	
CO	MT	107	10.6	RV	
CO	MT	108	11.9	RV	
CO	MT	109	11.3	RV	
CO	MT	109	11	RV	
CO	MT	109	11.5	RV	
CO	MT	110	11.6	RV	
CO	MT	110	13	RV	
CO	MT	111	11.7	RV	
CO	MT	113	12.7	RV	
CO	MT	113	14.2	RV	
CO	MT	115	13.5	RV	
CO	MT	116	14.3	RV	
RBT	IM	106	16	UM	
RBT	IM	121	19.3	UM	
RBT	IM	121	17.6	UM	
RBT	MT	132	24	UM	
RBT	MT	136	24.6	UM	
RBT	MT	143	27.5	UM	
RBT	MT	146	31.4	UM	
RBT	MT	149	30.8	UM	
RBT	MT	149	30.4	UM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
RBT	MT	150	33.5	UM	
RBT	MT	152	32.4	UM	
RBT	MT	155	37.5	UM	
RBT	MT	158	39.7	UM	
RBT	MT	158	38.3	UM	
RBT	MT	158	39.1	UM	
RBT	MT	159	37.4	UM	
RBT	MT	159	38.1	UM	
RBT	MT	162	45	UM	
RBT	MT	162	38.2	UM	
RBT	MT	163	47.6	UM	
RBT	MT	165	45.1	UM	
RBT	MT	165	43.2	UM	
RBT	MT	165	44.7	UM	
RBT	MT	169	43.9	UM	
RBT	MT	173	53.6	UM	
RBT	MT	175	46.6	UM	
RBT	MT	176	46	UM	
RBT	MT	177	50.7	UM	
RBT	MT	181	54.8	UM	
RBT	MT	196	80.6	UM	

DAY : 14 **SAMPLE DATE :** June 10/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	92	10	UM	
CH	MT	93	8.8	UM	
CH	MT	94	9	UM	
CH	MT	95	9	UM	
CH	MT	99	10.3	UM	
CH	MT	110	15.5	UM	
CO	MT	90	6.7	AD	
CO	MT	90	7.8	AD	
CO	MT	91	7.6	AD	
CO	MT	91	7.5	AD	
CO	MT	91	6.9	AD	
CO	MT	92	7.6	AD	
CO	MT	92	7.9	AD	
CO	MT	92	7.6	AD	
CO	MT	93	8.1	AD	
CO	MT	94	8.2	AD	
CO	MT	95	8.2	AD	
CO	MT	95	8.6	AD	
CO	MT	95	8.1	AD	
CO	MT	95	8.2	AD	
CO	MT	96	8.6	AD	
CO	MT	96	8.3	AD	
CO	MT	96	9	AD	
CO	MT	96	8.9	AD	
CO	MT	96	8.4	AD	
CO	MT	96	8.7	AD	
CO	MT	96	9.1	AD	
CO	MT	97	9.8	AD	
CO	MT	97	9.2	AD	
CO	MT	97	9	AD	
CO	MT	97	9.2	AD	
CO	MT	97	9.1	AD	
CO	MT	98	9	AD	
CO	MT	98	9.8	AD	
CO	MT	98	10	AD	
CO	MT	99	9.4	AD	
CO	MT	99	9.1	AD	
CO	MT	99	9.7	AD	
CO	MT	99	8.5	AD	
CO	MT	99	8.8	AD	
CO	MT	99	9.7	AD	
CO	MT	99	9.5	AD	
CO	MT	99	9.7	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	100	9.3	AD	
CO	MT	100	10.1	AD	
CO	MT	100	12.4	AD	
CO	MT	101	10.3	AD	
CO	MT	101	10.3	AD	
CO	MT	101	10.7	AD	
CO	MT	101	10.1	AD	
CO	MT	102	10.8	AD	
CO	MT	102	10	AD	
CO	MT	102	10.9	AD	
CO	MT	102	9.7	AD	
CO	MT	102	10.9	AD	
CO	MT	102	11.6	AD	
CO	MT	102	10.9	AD	
CO	MT	102	10.7	AD	
CO	MT	103	10.3	AD	
CO	MT	103	10.6	AD	
CO	MT	103	11.3	AD	
CO	MT	103	11.1	AD	
CO	MT	103	10.7	AD	
CO	MT	103	11.4	AD	
CO	MT	103	10.1	AD	
CO	MT	104	10.7	AD	
CO	MT	104	10.6	AD	
CO	MT	104	9.9	AD	
CO	MT	105	11	AD	
CO	MT	105	10.9	AD	
CO	MT	105	11.3	AD	
CO	MT	106	12.2	AD	
CO	MT	106	11.4	AD	
CO	MT	107	11.1	AD	
CO	MT	107	11.6	AD	
CO	MT	108	12	AD	
CO	MT	108	12.5	AD	
CO	MT	108	12.1	AD	
CO	MT	108	10.7	AD	
CO	MT	108	12.2	AD	
CO	MT	109	12.4	AD	
CO	MT	109	11	AD	
CO	MT	111	12.5	AD	
CO	MT	111	13.6	AD	
CO	MT	114	15.6	AD	
CO	MT	96	8.6	AD/RM	
CO	MT	99	9.2	AD/RM	
CO	MT	100	9.6	AD/RM	
CO	MT	100	9.6	AD/RM	
CO	MT	101	9.7	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	102	9.5	AD/RM	
CO	MT	104	10.6	AD/RM	
CO	MT	105	11	AD/RM	
CO	MT	105	10.2	AD/RM	
CO	MT	105	10.4	AD/RM	
CO	MT	105	11.3	AD/RM	
CO	MT	105	12.9	AD/RM	
CO	MT	106	11.4	AD/RM	
CO	MT	106	11	AD/RM	
CO	MT	106	10.8	AD/RM	
CO	MT	106	11.1	AD/RM	
CO	MT	107	12.1	AD/RM	
CO	MT	108	12.3	AD/RM	
CO	MT	108	11.4	AD/RM	
CO	MT	108	12.2	AD/RM	
CO	MT	108	12.1	AD/RM	
CO	MT	108	11.1	AD/RM	
CO	MT	109	11.2	AD/RM	
CO	MT	109	12.2	AD/RM	
CO	MT	109	11.8	AD/RM	
CO	MT	109	12.2	AD/RM	
CO	MT	109	12.8	AD/RM	
CO	MT	109	11.9	AD/RM	
CO	MT	109	12.3	AD/RM	
CO	MT	110	13.6	AD/RM	
CO	MT	110	11.4	AD/RM	
CO	MT	110	12.1	AD/RM	
CO	MT	110	12	AD/RM	
CO	MT	111	13.5	AD/RM	
CO	MT	111	13.1	AD/RM	
CO	MT	111	13.4	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	111	12.2	AD/RM	
CO	MT	111	11.5	AD/RM	
CO	MT	111	12.4	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	112	13.8	AD/RM	
CO	MT	112	13.2	AD/RM	
CO	MT	112	13.1	AD/RM	
CO	MT	112	13.6	AD/RM	
CO	MT	112	13.2	AD/RM	
CO	MT	113	13.6	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	113	13	AD/RM	
CO	MT	113	12.8	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	113	12.5	AD/RM	
CO	MT	113	12.8	AD/RM	
CO	MT	113	14.6	AD/RM	
CO	MT	113	14.2	AD/RM	
CO	MT	113	14.5	AD/RM	
CO	MT	113	14.2	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	113	12.6	AD/RM	
CO	MT	113	13.1	AD/RM	
CO	MT	114	14.1	AD/RM	
CO	MT	114	13.5	AD/RM	
CO	MT	114	13.1	AD/RM	
CO	MT	114	13.9	AD/RM	
CO	MT	114	13.8	AD/RM	
CO	MT	114	13.9	AD/RM	
CO	MT	115	15.1	AD/RM	
CO	MT	115	13.5	AD/RM	
CO	MT	115	14.3	AD/RM	
CO	MT	115	14.2	AD/RM	
CO	MT	115	13.5	AD/RM	
CO	MT	115	14	AD/RM	
CO	MT	115	15.2	AD/RM	
CO	MT	115	13.2	AD/RM	
CO	MT	115	15.3	AD/RM	
CO	MT	115	14	AD/RM	
CO	MT	115	13.4	AD/RM	
CO	MT	115	14.3	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	14.2	AD/RM	
CO	MT	116	12.4	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	14.2	AD/RM	
CO	MT	116	14	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	116	14.1	AD/RM	
CO	MT	117	15.1	AD/RM	
CO	MT	117	15.4	AD/RM	
CO	MT	117	14	AD/RM	
CO	MT	117	16.6	AD/RM	
CO	MT	117	14.3	AD/RM	
CO	MT	118	15.5	AD/RM	
CO	MT	119	14.5	AD/RM	
CO	MT	119	15.1	AD/RM	
CO	MT	121	16.1	AD/RM	
CO	MT	121	17.2	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	121	17.2	AD/RM	
CO	MT	122	15.9	AD/RM	
CO	MT	124	18	AD/RM	
CO	MT	124	18.1	AD/RM	
CO	MT	94	8.4	RV	
CO	MT	96	9.6	RV	
CO	MT	103	9.7	RV	
CO	MT	103	10.1	RV	
CO	MT	105	10.9	RV	
CO	MT	107	11.8	RV	
CO	MT	107	11.2	RV	
CO	MT	108	11.9	RV	
CO	MT	109	11.8	RV	
CO	MT	115	14.1	RV	
CO	**MT**	**102**	**10.2**	**UM**	
LAMPREY					
RBT	IM	101	10.3	UM	
RBT	IM	105	12	UM	
RBT	IM	105	11.8	UM	
RBT	IM	109	14	UM	
RBT	IM	111	15	UM	
RBT	IM	114	16	UM	
RBT	IM	115	14.7	UM	
RBT	IM	115	16.2	UM	
RBT	IM	116	17.1	UM	
RBT	IM	121	19.3	UM	
RBT	IM	121	17.9	UM	
RBT	IM	125	21	UM	
RBT	MT	134	22.7	UM	
RBT	IM	136	26.1	UM	
RBT	MT	136	23.2	UM	
RBT	MT	141	25.2	UM	
RBT	MT	146	28	UM	
RBT	MT	148	31.9	UM	
RBT	MT	152	34.7	UM	
RBT	MT	155	37	UM	
RBT	MT	155	32.5	UM	
RBT	MT	155	37.3	UM	
RBT	MT	157	34.5	UM	
RBT	MT	161	31.9	UM	
RBT	MT	162	39.3	UM	
RBT	MT	165	41	UM	
RBT	MT	166	41.2	UM	
RBT	MT	166	41.3	UM	
RBT	MT	166	44.9	UM	
RBT	MT	175	53.8	UM	
WHS	IM	124	14.9	UM	

DAY : 16 **SAMPLE DATE :** June 13/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/R	General Comments
CH	IM	39	0.5	UM	
CO	MT	82	6	AD	
CO	MT	90	9	AD	
CO	MT	91	8.3	AD	
CO	MT	96	9.5	AD	
CO	MT	98	9.4	AD	
CO	MT	98	9.7	AD	
CO	MT	100	10.2	AD	
CO	MT	100	10.9	AD	
CO	MT	101	9.5	AD	
CO	MT	101	9.7	AD	
CO	MT	101	10.1	AD	
CO	MT	101	9.9	AD	
CO	MT	101	10.3	AD	
CO	MT	105	12.1	AD	
CO	MT	106	11.5	AD	
CO	MT	107	13.7	AD	
CO	MT	104	11.2	AD/RM	
CO	MT	114	13.9	AD/RM	
CO	MT	110	13.2	RV	
CO	MT	113	14.6	RV	

DAY : 17 **SAMPLE DATE :** Jun 14/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	IM	40	0.9	UM	
CH	IM	41	0.9	UM	
CO	MT	88	7.1	AD	
CO	MT	91	7.5	AD	
CO	MT	92	7.8	AD	
CO	MT	94	8.2	AD	
CO	MT	94	8.9	AD	
CO	MT	95	8.4	AD	
CO	MT	95	9.5	AD	
CO	MT	95	9.2	AD	
CO	MT	95	8.7	AD	
CO	MT	95	8.5	AD	
CO	MT	95	10	AD	
CO	MT	95	8.5	AD	
CO	MT	95	8.5	AD	
CO	MT	96	9.5	AD	
CO	MT	96	9.5	AD	
CO	MT	96	10.3	AD	
CO	MT	96	9.3	AD	
CO	MT	96	8.8	AD	
CO	MT	96	9.6	AD	
CO	MT	96	8.9	AD	
CO	MT	96	10	AD	
CO	MT	96	9.5	AD	
CO	MT	96	9	AD	
CO	MT	97	9.3	AD	
CO	MT	97	9.9	AD	
CO	MT	97	9.7	AD	
CO	MT	97	11.4	AD	
CO	MT	97	10.2	AD	
CO	MT	97	9.3	AD	
CO	MT	98	9.9	AD	
CO	MT	98	9.7	AD	
CO	MT	98	9.7	AD	
CO	MT	98	9.5	AD	
CO	MT	98	9.2	AD	
CO	MT	99	10.3	AD	
CO	MT	99	10	AD	
CO	MT	100	10.6	AD	
CO	MT	100	10.7	AD	
CO	MT	100	9.8	AD	
CO	MT	100	9.1	AD	
CO	MT	100	10.1	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	100	9.9	AD	
CO	MT	100	10.5	AD	
CO	MT	101	9.9	AD	
CO	MT	101	10.4	AD	
CO	MT	101	10.1	AD	
CO	MT	101	11.8	AD	
CO	MT	101	10.8	AD	
CO	MT	101	10.7	AD	
CO	MT	101	11.3	AD	
CO	MT	101	11.3	AD	
CO	MT	101	10.1	AD	
CO	MT	102	10.5	AD	
CO	MT	102	11.2	AD	
CO	MT	102	10.6	AD	
CO	MT	102	11.3	AD	
CO	MT	102	11.6	AD	
CO	MT	102	10.8	AD	
CO	MT	102	10.6	AD	
CO	MT	102	11.1	AD	
CO	MT	102	10.7	AD	
CO	MT	102	10.4	AD	
CO	MT	102	11.5	AD	
CO	MT	102	10.1	AD	
CO	MT	102	11.1	AD	
CO	MT	103	9.9	AD	
CO	MT	103	10	AD	
CO	MT	103	11.7	AD	
CO	MT	103	10.3	AD	
CO	MT	103	11.1	AD	
CO	MT	104	11.1	AD	
CO	MT	104	10.5	AD	
CO	MT	104	11.6	AD	
CO	MT	104	12.1	AD	
CO	MT	104	11.1	AD	
CO	MT	104	12.2	AD	
CO	MT	105	11.8	AD	
CO	MT	105	11.1	AD	
CO	MT	105	11.9	AD	
CO	MT	105	11.5	AD	
CO	MT	106	12.8	AD	
CO	MT	106	12.9	AD	
CO	MT	106	12	AD	
CO	MT	107	11.7	AD	
CO	MT	107	12.2	AD	
CO	MT	108	13.3	AD	
CO	MT	108	14.3	AD	
CO	MT	108	13.1	AD	
CO	MT	108	13.1	AD	
CO	MT	109	13	AD	
CO	MT	109	13.2	AD	
CO	MT	110	13.8	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	112	13.7	AD	
CO	MT	113	14.9	AD	
CO	MT	114	16	AD	
CO	MT	116	14.2	AD	
CO	MT	105	11.3	AD/RM	
CO	MT	106	12	AD/RM	
CO	MT	106	12.1	AD/RM	
CO	MT	108	11.8	AD/RM	
CO	MT	110	12.4	AD/RM	
CO	MT	110	12.7	AD/RM	
CO	MT	114	14.9	AD/RM	
CO	MT	115	14.7	AD/RM	
CO	MT	115	14.9	AD/RM	
CO	MT	116	15.5	AD/RM	
CO	MT	101	10.7	RV	
CO	MT	111	13.2	RV	
CO	MT	111	14.2	RV	
Lamprey					17
RBT	IM	73	4.2	UM	
RBT	IM	105	12.8	UM	
RBT	IM	112	15.9	UM	
RBT	IM	113	13.5	UM	
RBT	IM	115	16.6	UM	
RBT	IM	125	21.8	UM	
RBT	IM	126	21.8	UM	
RBT	MT	136	29.3	UM	
RBT	MT	142	31.5	UM	
RBT	MT	143	31.5	UM	
RBT	MT	146	29.3	UM	
RBT	MT	157	41.8	UM	
RBT	MT	159	41.2	UM	
RBT	MT	162	41.5	UM	
RBT	MT	163	39.5	UM	
RBT	MT	165	43.4	UM	
RBT	MT	166	42.4	UM	

DAY : 18 **SAMPLE DATE :** June 15/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	98	10.2	UM	
CO	MT	91	7.8	AD	
CO	MT	92	8.3	AD	
CO	MT	94	8	AD	
CO	MT	95	8.9	AD	
CO	MT	95	8.7	AD	
CO	MT	95	8.4	AD	
CO	MT	96	9.4	AD	
CO	MT	96	8.5	AD	
CO	MT	96	8.8	AD	
CO	MT	96	9.4	AD	
CO	MT	96	10.3	AD	
CO	MT	96	8.5	AD	
CO	MT	97	11.3	AD	
CO	MT	97	9.4	AD	
CO	MT	97	9.1	AD	
CO	MT	97	9.5	AD	
CO	MT	97	9.8	AD	
CO	MT	97	9.3	AD	
CO	MT	97	9.3	AD	
CO	MT	97	8.5	AD	
CO	MT	98	9.6	AD	
CO	MT	98	10.2	AD	
CO	MT	98	9.9	AD	
CO	MT	98	9.5	AD	
CO	MT	99	10	AD	
CO	MT	99	10	AD	
CO	MT	99	9.8	AD	
CO	MT	99	9.9	AD	
CO	MT	100	10.1	AD	
CO	MT	100	10.7	AD	
CO	MT	100	10.1	AD	
CO	MT	100	9.7	AD	
CO	MT	100	9.6	AD	
CO	MT	100	9.8	AD	
CO	MT	100	9.4	AD	
CO	MT	100	10.3	AD	
CO	MT	100	10.1	AD	
CO	MT	100	10.5	AD	
CO	MT	100	9.6	AD	
CO	MT	101	10.6	AD	
CO	MT	101	11.3	AD	
CO	MT	101	9.9	AD	
CO	MT	101	10.7	AD	
CO	MT	101	9.8	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	101	10.2	AD	
CO	MT	101	10.1	AD	
CO	MT	101	10.6	AD	
CO	MT	101	9.9	AD	
CO	MT	101	10.4	AD	
CO	MT	101	11.1	AD	
CO	MT	101	10.1	AD	
CO	MT	102	11.3	AD	
CO	MT	102	10.8	AD	
CO	MT	102	11.1	AD	
CO	MT	102	9.9	AD	
CO	MT	102	10.5	AD	
CO	MT	102	10.6	AD	
CO	MT	102	11.6	AD	
CO	MT	102	10.4	AD	
CO	MT	103	10.5	AD	
CO	MT	103	10.8	AD	
CO	MT	103	11	AD	
CO	MT	103	10.6	AD	
CO	MT	103	11.2	AD	
CO	MT	103	10.3	AD	
CO	MT	103	11.3	AD	
CO	MT	103	10.5	AD	
CO	MT	103	11.3	AD	
CO	MT	103	12	AD	
CO	MT	104	11.2	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.4	AD	
CO	MT	104	10.4	AD	
CO	MT	105	11.6	AD	
CO	MT	105	11.9	AD	
CO	MT	105	12.1	AD	
CO	MT	105	11.3	AD	
CO	MT	105	11.7	AD	
CO	MT	105	8.3	AD	
CO	MT	105	12.5	AD	
CO	MT	105	11	AD	
CO	MT	106	11.6	AD	
CO	MT	106	11.3	AD	
CO	MT	106	11.8	AD	
CO	MT	106	11.6	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.2	AD	
CO	MT	106	12.1	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	107	12.4	AD	
CO	MT	107	12.7	AD	
CO	MT	107	11.8	AD	
CO	MT	107	10.6	AD	
CO	MT	107	12.6	AD	
CO	MT	108	12.1	AD	
CO	MT	108	12.7	AD	
CO	MT	108	13	AD	
CO	MT	110	14.5	AD	
CO	MT	110	13	AD	
CO	MT	110	13.2	AD	
CO	MT	110	14.2	AD	
CO	MT	111	14.3	AD	
CO	MT	112	14.3	AD	
CO	MT	112	13.2	AD	
CO	MT	112	14.2	AD	
CO	MT	116	16.6	AD	
CO	MT	116	15.2	AD	
CO	MT	122	17.1	AD	
CO	MT	104	10	AD/RM	
CO	MT	104	10.7	AD/RM	
CO	MT	106	11.7	AD/RM	
CO	MT	106	11.7	AD/RM	
CO	MT	107	11.3	AD/RM	
CO	MT	108	12.2	AD/RM	
CO	MT	109	12.7	AD/RM	
CO	MT	109	12.5	AD/RM	
CO	MT	110	11.6	AD/RM	
CO	MT	110	11.4	AD/RM	
CO	MT	110	12.1	AD/RM	
CO	MT	111	12.5	AD/RM	
CO	MT	111	12.5	AD/RM	
CO	MT	113	13.4	AD/RM	
CO	MT	117	14.7	AD/RM	
CO	MT	118	15.2	AD/RM	
CO	MT	100	9.7	RV	
CO	MT	108	11.4	RV	
RBT	IM	92	8.2	UM	
RBT	IM	97	8.3	UM	
RBT	IM	115	14.8	UM	
RBT	MT	135	22.9	UM	
RBT	MT	136	26.6	UM	
RBT	MT	139	30.7	UM	
RBT	MT	145	31.5	UM	
RBT	MT	145	32.4	UM	
RBT	MT	149	34.2	UM	
RBT	MT	153	34.3	UM	
RBT	MT	158	36	UM	
RBT	MT	161	40.5	UM	

DAY : 19 **SAMPLE DATE :** June 16/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	99	10.1	UM	
CH	MT	102	11.8	UM	
CO	MT	95	8.9	AD	
CO	MT	95	8.4	AD	
CO	MT	96	9.4	AD	
CO	MT	96	10	AD	
CO	MT	96	8.2	AD	
CO	MT	96	9.1	AD	
CO	MT	96	8.6	AD	
CO	MT	96	9.7	AD	
CO	MT	97	10	AD	
CO	MT	97	9.8	AD	
CO	MT	97	8.9	AD	
CO	MT	97	9.3	AD	
CO	MT	98	9.7	AD	
CO	MT	98	10.1	AD	
CO	MT	98	9.7	AD	
CO	MT	98	8.8	AD	
CO	MT	98	9.5	AD	
CO	MT	99	10.5	AD	
CO	MT	99	9.9	AD	Recapture
CO	MT	99	9.2	AD	
CO	MT	99	9.5	AD	Recapture
CO	MT	99	8.9	AD	
CO	MT	99	9.4	AD	Recapture
CO	MT	100	10.3	AD	
CO	MT	100	10	AD	
CO	MT	100	10.8	AD	
CO	MT	100	9.9	AD	
CO	MT	100	9.9	AD	
CO	MT	101	10.4	AD	Recapture
CO	MT	101	10.3	AD	
CO	MT	101	10.4	AD	
CO	MT	101	10.3	AD	Recapture
CO	MT	101	10.5	AD	
CO	MT	101	10.7	AD	
CO	MT	101	10.9	AD	
CO	MT	101	10.2	AD	
CO	MT	101	9.5	AD	
CO	MT	101	10.4	AD	
CO	MT	101	10.2	AD	
CO	MT	101	10.1	AD	
CO	MT	101	9.8	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	101	10.6	AD	
CO	MT	101	10.1	AD	
CO	MT	101	11.3	AD	
CO	MT	101	9.8	AD	
CO	MT	102	9.9	AD	
CO	MT	102	10.2	AD	
CO	MT	102	9.3	AD	
CO	MT	102	10.9	AD	
CO	MT	102	10.5	AD	
CO	MT	102	10.2	AD	Recapture
CO	MT	102	11.1	AD	
CO	MT	102	10.1	AD	
CO	MT	103	11.1	AD	
CO	MT	103	11.3	AD	
CO	MT	103	10.4	AD	Recapture
CO	MT	103	10.6	AD	
CO	MT	103	11.4	AD	
CO	MT	104	11.6	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.9	AD	
CO	MT	104	10.6	AD	
CO	MT	104	10.6	AD	Recapture
CO	MT	104	11.2	AD	
CO	MT	105	12.2	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.5	AD	
CO	MT	105	11.1	AD	Recapture
CO	MT	105	10	AD	
CO	MT	105	10.4	AD	Recapture
CO	MT	105	11.3	AD	
CO	MT	105	10.9	AD	
CO	MT	105	11.5	AD	
CO	MT	106	11.4	AD	
CO	MT	106	11.9	AD	
CO	MT	106	11.4	AD	Recapture
CO	MT	106	12.1	AD	
CO	MT	106	11.7	AD	
CO	MT	106	11.6	AD	
CO	MT	106	12.6	AD	
CO	MT	106	11.2	AD	
CO	MT	106	11.6	AD	
CO	MT	107	13.2	AD	
CO	MT	107	12	AD	
CO	MT	107	12.2	AD	
CO	MT	107	11.5	AD	
CO	MT	107	12.6	AD	

DAY : 20 **SAMPLE DATE :** June 17/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	95	8.2	AD	
CO	MT	95	9.1	AD	
CO	MT	95	8.6	AD	
CO	MT	96	8.3	AD	
CO	MT	96	8.3	AD	
CO	MT	96	8.7	AD	
CO	MT	96	9	AD	
CO	MT	97	9.7	AD	
CO	MT	97	9.2	AD	
CO	MT	98	8.8	AD	
CO	MT	98	8.7	AD	
CO	MT	99	9.5	AD	
CO	MT	99	9	AD	
CO	MT	99	10.2	AD	
CO	MT	99	10	AD	
CO	MT	99	9.9	AD	
CO	MT	99	10.1	AD	
CO	MT	99	9.8	AD	
CO	MT	99	10.2	AD	
CO	MT	100	9.9	AD	
CO	MT	100	10.1	AD	
CO	MT	100	10	AD	
CO	MT	100	9.9	AD	
CO	MT	100	9.7	AD	
CO	MT	100	11.5	AD	
CO	MT	101	10.2	AD	
CO	MT	101	9.9	AD	
CO	MT	101	10.4	AD	
CO	MT	102	10.8	AD	
CO	MT	102	10.6	AD	
CO	MT	102	10.3	AD	
CO	MT	102	10.3	AD	
CO	MT	102	10.5	AD	
CO	MT	102	10.2	AD	
CO	MT	103	10.3	AD	
CO	MT	103	10	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.6	AD	
CO	MT	104	11.1	AD	
CO	MT	104	11.5	AD	
CO	MT	104	10.7	AD	
CO	MT	104	10.1	AD	
CO	MT	105	11.5	AD	
CO	MT	105	11.5	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11.7	AD	
CO	MT	106	12.1	AD	
CO	MT	106	11.1	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	106	12.1	AD	
CO	MT	106	12.7	AD	
CO	MT	106	11.8	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12	AD	
CO	MT	106	12	AD	
CO	MT	106	12.6	AD	
CO	MT	106	10.8	AD	
CO	MT	106	11.7	AD	
CO	MT	107	11.6	AD	
CO	MT	107	11.8	AD	
CO	MT	107	12.7	AD	
CO	MT	107	11.7	AD	
CO	MT	107	11.8	AD	
CO	MT	108	11.5	AD	Recapture
CO	MT	108	12.1	AD	
CO	MT	109	13.3	AD	
CO	MT	109	12.1	AD	
CO	MT	109	12.7	AD	
CO	MT	110	13.8	AD	
CO	MT	110	11.8	AD	
CO	MT	111	14.1	AD	
CO	MT	111	13	AD	
CO	MT	111	13.3	AD	
CO	MT	122	19.4	AD	Scales taken 51399-06
CO	MT	103	11.3	AD/RM	
CO	MT	105	10	AD/RM	
CO	MT	106	11.5	AD/RM	
CO	MT	110	12.3	AD/RM	
CO	MT	110	12.9	AD/RM	
CO	MT	111	13	AD/RM	
CO	MT	111	12.9	AD/RM	
CO	MT	113	13.2	AD/RM	
CO	MT	114	13.1	AD/RM	
CO	MT	115	14	AD/RM	
CO	MT	115	12.6	AD/RM	
CO	MT	116	14.6	AD/RM	
CO	MT	117	15.3	AD/RM	
CO	MT	119	14.5	AD/RM	
CO	MT	120	16.1	AD/RM	
CO	MT	120	15	AD/RM	
CO	MT	120	16.5	AD/RM	
CO	MT	121	15.8	AD/RM	
CO	MT	121	17.4	AD/RM	
Lamprey					14 juveniles/1adult
LNC	MT	89	9.1	UM	Female ready to spawn
RBT	IM	71	3.6	UM	
RBT	IM	106	12.1	UM	
RBT	IM	108	12.7	UM	
RBT	IM	109	13.6	UM	
RBT	IM	111	15.3	UM	
RBT	IM	121	18.9	UM	
RBT	IM	124	19.1	UM	
RBT	IM	130	20.8	UM	
RBT	MT	132	25.4	UM	
RBT	MT	137	24.6	UM	
RBT	MT	144	29.9	UM	
RBT	MT	162	42.9	UM	
RBT	MT	175	52.1	UM	

DAY : 21 **SAMPLE DATE :** June 18/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	95	9	AD	
CO	MT	96	9.2	AD	
CO	MT	96	8.5	AD	
CO	MT	96	9.1	AD	
CO	MT	97	8.8	AD	
CO	MT	97	10.1	AD	
CO	MT	98	9.3	AD	
CO	MT	98	10.1	AD	
CO	MT	98	9.6	AD	
CO	MT	98	9.6	AD	
CO	MT	98	9.3	AD	
CO	MT	99	9.7	AD	
CO	MT	99	9.4	AD	
CO	MT	99	9.6	AD	
CO	MT	99	9.7	AD	
CO	MT	100	9.5	AD	
CO	MT	101	9.5	AD	
CO	MT	101	9	AD	
CO	MT	101	10.2	AD	
CO	MT	101	10.8	AD	
CO	MT	102	10.5	AD	
CO	MT	102	10.2	AD	
CO	MT	102	10.4	AD	
CO	MT	102	10.5	AD	
CO	MT	102	9.6	AD	
CO	MT	102	10.2	AD	
CO	MT	103	10.9	AD	
CO	MT	103	11.3	AD	
CO	MT	103	10.1	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.3	AD	
CO	MT	105	11.6	AD	
CO	MT	105	11.5	AD	
CO	MT	106	12.2	AD	
CO	MT	106	11.6	AD	
CO	MT	106	11.2	AD	
CO	MT	106	11.9	AD	
CO	MT	107	11.8	AD	
CO	MT	107	12	AD	
CO	MT	108	13.1	AD	
CO	MT	108	12	AD	
CO	MT	109	13.3	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	109	13	AD	
CO	MT	110	14.2	AD	
CO	MT	111	14	AD	
CO	MT	111	13.4	AD	
CO	MT	114	13.9	AD	
CO	MT	114	14.9	AD	
CO	MT	107	11.8	AD/RM	
CO	MT	109	12.3	AD/RM	
CO	MT	111	12.7	AD/RM	
CO	MT	114	14	AD/RM	
CO	MT	116	15.1	AD/RM	
CO	MT	116	15.4	AD/RM	
CO	MT	118	16	AD/RM	
CO	MT	119	16.4	AD/RM	
CO	MT	120	16.1	AD/RM	
CO	MT	86	6.8	RV	
CO	MT	108	11.4	RV	
CO	MT	99	9.3	UM	
RBT	IM	105	12.8	UM	
RBT	IM	106	12.5	UM	
RBT	IM	110	14.4	UM	
RBT	IM	113	14.8	UM	
RBT	IM	127	20.6	UM	
RBT	MT	130	23.1	UM	
RBT	MT	141	28.3	UM	
RBT	MT	147	29.9	UM	
RBT	MT	161	37.8	UM	Scales taken 51396-14
RBT	MT	162	43.5	UM	Scales taken 51396-11
RBT	MT	171	46.6	UM	Scales taken 51396-13
RBT	MT	179	62.2	UM	Scales taken 51396-12

DAY : 22 **SAMPLE DATE :** June 19/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	96	9	AD	
CO	MT	97	9.6	AD	
CO	MT	97	9.5	AD	
CO	MT	98	10.6	AD	
CO	MT	98	9.6	AD	
CO	MT	99	9.7	AD	
CO	MT	100	10	AD	
CO	MT	100	10.3	AD	
CO	MT	101	10.4	AD	
CO	MT	101	10.7	AD	
CO	MT	101	10.7	AD	
CO	MT	101	10.7	AD	
CO	MT	101	9.2	AD	
CO	MT	101	10.6	AD	
CO	MT	102	11.5	AD	
CO	MT	102	10.8	AD	
CO	MT	102	11.1	AD	
CO	MT	102	11.1	AD	
CO	MT	102	10.5	AD	
CO	MT	103	12.5	AD	
CO	MT	103	11.5	AD	
CO	MT	103	11.1	AD	
CO	MT	103	11.6	AD	
CO	MT	104	11.6	AD	
CO	MT	104	12	AD	
CO	MT	104	11.5	AD	
CO	MT	104	11.4	AD	
CO	MT	104	11.2	AD	
CO	MT	104	11.6	AD	
CO	MT	104	11.2	AD	
CO	MT	104	11.6	AD	
CO	MT	104	10.7	AD	
CO	MT	105	12	AD	
CO	MT	105	11	AD	
CO	MT	105	10.7	AD	
CO	MT	105	12.3	AD	
CO	MT	105	11.4	AD	
CO	MT	106	12	AD	
CO	MT	106	12.2	AD	
CO	MT	106	12.3	AD	
CO	MT	106	11.6	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.6	AD	
CO	MT	106	13.3	AD	
CO	MT	106	12.1	AD	
CO	MT	106	11.8	AD	
CO	MT	107	11.4	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	107	12	AD	
CO	MT	107	11.6	AD	
CO	MT	107	11.9	AD	
CO	MT	107	11.6	AD	
CO	MT	107	12.5	AD	
CO	MT	108	12.9	AD	
CO	MT	108	12.1	AD	
CO	MT	108	12.2	AD	
CO	MT	108	13	AD	
CO	MT	110	13.7	AD	
CO	MT	110	13	AD	
CO	MT	110	13.2	AD	
CO	MT	110	12.6	AD	
CO	MT	111	13.7	AD	
CO	MT	111	15.3	AD	Scales taken 51399-08
CO	MT	113	15.1	AD	Scales taken 51399-10
CO	MT	116	16.5	AD	Scales taken 51399-09
CO	MT	122	18.5	AD	Scales taken 51399-07
CO	MT	104	11.7	AD/RM	
CO	MT	106	11.8	AD/RM	
CO	MT	106	12.7	AD/RM	
CO	MT	110	13.1	AD/RM	
CO	MT	113	13.6	AD/RM	
CO	MT	115	14.2	AD/RM	
CO	MT	115	15.4	AD/RM	
CO	MT	116	14.8	AD/RM	
CO	MT	118	16.7	AD/RM	
CO	MT	119	16.8	AD/RM	
CO	MT	122	17.4	AD/RM	
CO	MT	126	19.7	AD/RM	
CO	MT	102	9.9	RV	
CO	MT	107	12.7	RV	
CO	MT	108	11.9	RV	
CO	MT	112	13.4	RV	
Lamprey					9 lamprey
RBT	IM	75	4.1	UM	
RBT	IM	77	3.6	UM	
RBT	IM	94	8.9	UM	
RBT	IM	108	13.4	UM	
RBT	IM	112	14.1	UM	
RBT	IM	115	16.2	UM	
RBT	IM	115	17.6	UM	
RBT	IM	117	18.4	UM	
RBT	IM	119	18.9	UM	
RBT	IM	122	17.2	UM	
RBT	IM	123	19.2	UM	
RBT	IM	126	21.1	UM	
RBT	IM	126	20	UM	
RBT	IM	126	20.5	UM	
RBT	IM	131	24.1	UM	
RBT	IM	140	26	UM	
RBT	MT	142	30.5	UM	Scales taken 51396-15
RBT	MT	146	33	UM	Scales taken 51396-16
RBT	MT	156	36.1	UM	Scales taken 51396-17
RBT	MT	161	38.3	UM	
RBT	MT	163	44	UM	
WHS	IM	86	6.8	UM	
WHS	IM	160	33.3	UM	

DAY : 23 **SAMPLE DATE :** June 20/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	92	7.5	AD	
CO	MT	100	9.9	AD	
CO	MT	101	10.8	AD	
CO	MT	102	10.1	AD	
CO	MT	105	11.3	AD	
CO	MT	107	11.8	AD	
RBT	IM	69	3.3	UM	

DAY : 24 **SAMPLE DATE :** June 21/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	101	10.7	AD	
CO	MT	101	10.6	AD	
CO	MT	102	11.6	AD	
CO	MT	104	10.9	AD	
CO	MT	104	11.8	AD	
CO	MT	106	11	AD	
CO	MT	106	11.6	AD	
CO	MT	106	12.5	AD	
CO	MT	107	12.7	AD	
CO	MT	108	13.2	AD	
CO	MT	110	13.7	AD	
CO	MT	113	15.4	AD	Scales taken 51399-11
CO	MT	119	18.4	AD	Scales taken 51399-12
CO	MT	115	13.8	AD/RM	
CO	MT	107	11.6	RV	
Lamprey					14 lamprey
RBT	IM	82	5.9	UM	Scales taken 51396-18
RBT	MT	144	28.8	UM	

DAY : 25 **SAMPLE DATE :** June 22/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	100	9.9	AD	
CO	MT	100	9.8	AD	
CO	MT	100	10.5	AD	
CO	MT	100	9.8	AD	
CO	MT	100	10.2	AD	
CO	MT	100	9.8	AD	
CO	MT	100	10.9	AD	
CO	MT	100	9.9	AD	
CO	MT	101	10.3	AD	
CO	MT	101	10.2	AD	
CO	MT	101	10.6	AD	
CO	MT	101	9.6	AD	
CO	MT	101	10.3	AD	
CO	MT	101	10	AD	
CO	MT	101	10.5	AD	
CO	MT	101	10.5	AD	
CO	MT	101	10.6	AD	
CO	MT	101	10.6	AD	
CO	MT	101	10.8	AD	
CO	MT	102	11.1	AD	
CO	MT	102	10.9	AD	
CO	MT	102	10.4	AD	
CO	MT	102	10.7	AD	
CO	AD	102	10.8	AD	
CO	MT	102	11	AD	
CO	MT	102	10.8	AD	
CO	MT	102	11.1	AD	
CO	MT	102	10.6	AD	
CO	MT	102	10.6	AD	
CO	MT	102	10.7	AD	
CO	MT	102	10.8	AD	
CO	MT	102	11.4	AD	
CO	MT	102	9.7	AD	
CO	MT	102	12.1	AD	
CO	MT	103	11.1	AD	
CO	MT	103	10.7	AD	
CO	MT	103	11.1	AD	
CO	MT	103	11.1	AD	
CO	MT	103	12.5	AD	
CO	MT	103	10.9	AD	
CO	MT	103	11.5	AD	
CO	MT	103	11	AD	
CO	MT	103	11.4	AD	
CO	MT	103	11.3	AD	
CO	MT	103	11.9	AD	
CO	MT	103	10.7	AD	
CO	MT	103	10.2	AD	
CO	MT	103	10.5	AD	
CO	MT	103	10.5	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	103	11.1	AD	
CO	MT	103	10.4	AD	
CO	MT	103	11.3	AD	
CO	MT	104	10.9	AD	
CO	MT	104	11.4	AD	
CO	MT	104	10.8	AD	
CO	MT	104	11.6	AD	
CO	MT	104	10.9	AD	
CO	MT	104	11.6	AD	
CO	MT	104	10.7	AD	
CO	MT	104	11	AD	
CO	MT	104	8.5	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11	AD	
CO	MT	105	11.3	AD	
CO	MT	105	11.9	AD	
CO	MT	105	11.5	AD	
CO	MT	105	11	AD	
CO	MT	105	11.3	AD	
CO	MT	105	12.1	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.2	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11	AD	
CO	MT	105	11.4	AD	
CO	MT	105	12	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11.7	AD	
CO	MT	106	13.6	AD	
CO	MT	106	12.6	AD	
CO	MT	106	12.3	AD	
CO	MT	106	11.4	AD	
CO	MT	106	11.7	AD	
CO	MT	106	11.1	AD	
CO	MT	106	11.9	AD	
CO	MT	106	12.2	AD	
CO	MT	106	11.9	AD	
CO	MT	106	11.8	AD	
CO	MT	106	11.5	AD	
CO	MT	106	12.4	AD	
CO	MT	106	11	AD	
CO	MT	106	11.2	AD	
CO	MT	106	11.8	AD	
CO	MT	107	12.2	AD	
CO	MT	107	12.1	AD	
CO	MT	107	12.7	AD	
CO	MT	107	12	AD	
CO	MT	107	12	AD	
CO	MT	107	12	AD	SAMPLE# 15
CO	MT	107	13.4	AD	
CO	MT	107	12	AD	
CO	MT	108	13.7	AD	SAMPLE# 16
CO	MT	108	13	AD	
CO	MT	108	11.7	AD	
CO	MT	108	12.1	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	108	12.2	AD	
CO	MT	108	12.4	AD	
CO	MT	108	12.3	AD	
CO	MT	108	12	AD	
CO	MT	108	11.6	AD	
CO	MT	108	13.3	AD	
CO	MT	108	12.2	AD	
CO	MT	108	12.7	AD	
CO	MT	108	12	AD	
CO	MT	108	12.5	AD	
CO	MT	108	12.4	AD	
CO	MT	109	12.3	AD	
CO	MT	109	13.1	AD	
CO	MT	109	11.7	AD	
CO	MT	109	13.7	AD	
CO	MT	109	12.6	AD	
CO	MT	109	12.3	AD	
CO	MT	109	14.5	AD	
CO	MT	109	13.5	AD	
CO	MT	109	12.8	AD	
CO	MT	109	13.6	AD	
CO	MT	110	13.2	AD	
CO	MT	110	12.7	AD	
CO	MT	110	14.2	AD	
CO	MT	110	12.6	AD	
CO	MT	110	13.4	AD	
CO	MT	110	12.9	AD	
CO	MT	110	12.9	AD	
CO	MT	110	13.2	AD	
CO	MT	110	13.4	AD	
CO	MT	110	12.4	AD	
CO	MT	110	14.1	AD	
CO	MT	110	13.3	AD	
CO	MT	110	14.2	AD	
CO	MT	111	14.6	AD	
CO	MT	111	14.8	AD	
CO	MT	111	14	AD	
CO	MT	111	14	AD	
CO	MT	111	15.2	AD	SCALE BOOK 51399 SAMPLE # 17
CO	MT	111	14.6	AD	
CO	MT	111	13.5	AD	
CO	MT	111	13.8	AD	
CO	MT	111	12.8	AD	
CO	MT	111	13.5	AD	
CO	MT	112	14.3	AD	
CO	MT	112	14.5	AD	
CO	MT	112	12.7	AD	
CO	MT	112	14	AD	
CO	MT	112	14.4	AD	
CO	MT	112	12.4	AD	
CO	MT	113	13.3	AD	
CO	MT	113	14.1	AD	
CO	MT	113	13.4	AD	
CO	MT	113	14.9	AD	
CO	MT	114	15.5	AD	
CO	MT	114	14.2	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	108	12.5	AD	
CO	MT	108	12.4	AD	

DAY : 26 **SAMPLE DATE :** June 23/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	121	19.7	LV	
CH	IM	49	1.1	UM	
CO	MT	94	8	AD	
CO	MT	95	8.6	AD	
CO	MT	99	10.2	AD	
CO	MT	100	9.5	AD	Recapture
CO	MT	100	9.5	AD	
CO	MT	100	9.5	AD	
CO	MT	100	9	AD	
CO	MT	100	10.6	AD	
CO	MT	100	9.7	AD	
CO	MT	101	10	AD	Recapture
CO	MT	101	10.3	AD	
CO	MT	101	10.3	AD	Recapture
CO	MT	101	10.9	AD	
CO	MT	101	9.6	AD	Recapture
CO	MT	102	10.9	AD	
CO	MT	102	10.8	AD	
CO	MT	102	11	AD	
CO	MT	102	10.5	AD	
CO	MT	102	11.4	AD	
CO	MT	102	10.6	AD	
CO	MT	102	10.9	AD	
CO	MT	102	11	AD	
CO	MT	102	11.4	AD	
CO	MT	102	10.3	AD	
CO	MT	103	10.4	AD	Recapture
CO	MT	103	10.6	AD	
CO	MT	103	10.6	AD	
CO	MT	103	11	AD	
CO	MT	103	10.7	AD	
CO	MT	103	11.1	AD	
CO	MT	103	10.4	AD	
CO	MT	103	11.1	AD	
CO	MT	103	9.8	AD	
CO	MT	103	10.2	AD	
CO	MT	103	10.7	AD	
CO	MT	104	11.1	AD	
CO	MT	104	10.5	AD	Recapture
CO	MT	104	11.4	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.7	AD	Recapture
CO	MT	104	11.2	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	104	10.6	AD	
CO	MT	104	11	AD	
CO	MT	104	11.6	AD	
CO	MT	104	11.8	AD	
CO	MT	104	11.4	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.8	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11.8	AD	Recapture
CO	MT	105	11.1	AD	Recapture
CO	MT	105	11	AD	
CO	MT	105	11.9	AD	
CO	MT	105	11.2	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.1	AD	
CO	MT	105	11.5	AD	Recapture
CO	MT	105	11.5	AD	
CO	MT	105	12.5	AD	
CO	MT	105	12	AD	
CO	MT	105	11.4	AD	
CO	MT	105	12	AD	
CO	MT	105	12.6	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.1	AD	Recapture
CO	MT	105	11.6	AD	
CO	MT	105	11.6	AD	
CO	MT	106	11.5	AD	
CO	MT	106	12.6	AD	
CO	MT	106	12	AD	
CO	MT	106	12.4	AD	
CO	MT	106	12.5	AD	
CO	MT	106	12.4	AD	
CO	MT	106	11.3	AD	
CO	MT	106	11.5	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.5	AD	
CO	MT	106	11.9	AD	
CO	MT	106	10.8	AD	
CO	MT	106	12.6	AD	
CO	MT	106	11.6	AD	
CO	MT	106	11.1	AD	
CO	MT	106	12.4	AD	
CO	MT	106	11.7	AD	
CO	MT	106	11	AD	
CO	MT	106	11.7	AD	
CO	MT	106	12	AD	
CO	MT	106	12.3	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	106	12.2	AD	
CO	MT	107	12.6	AD	
CO	MT	107	12.2	AD	
CO	MT	107	12	AD	
CO	MT	107	12.1	AD	
CO	MT	107	11.9	AD	
CO	MT	107	11.7	AD	
CO	MT	107	12.1	AD	
CO	MT	107	12.5	AD	
CO	MT	107	12.2	AD	
CO	MT	107	12.9	AD	
CO	MT	107	12.8	AD	
CO	MT	107	12	AD	
CO	MT	107	12.1	AD	
CO	MT	108	13.8	AD	
CO	MT	108	11.9	AD	
CO	MT	108	11.7	AD	Recapture
CO	MT	108	11.9	AD	
CO	MT	108	12.1	AD	
CO	MT	108	12.3	AD	Recapture
CO	MT	108	12.6	AD	Recapture
CO	MT	108	12.9	AD	
CO	MT	108	12.5	AD	
CO	MT	109	13.3	AD	
CO	MT	109	13	AD	
CO	MT	109	12.3	AD	
CO	MT	109	13.2	AD	
CO	MT	109	13.2	AD	Recapture
CO	MT	109	12.6	AD	
CO	MT	109	12.5	AD	
CO	MT	109	12.7	AD	
CO	MT	109	12.5	AD	
CO	MT	109	11.8	AD	Recapture
CO	MT	109	13.9	AD	
CO	MT	109	12.3	AD	Recapture
CO	MT	109	12.6	AD	
CO	MT	109	13	AD	
CO	MT	109	12.7	AD	
CO	MT	109	13.2	AD	
CO	MT	109	12.7	AD	
CO	MT	109	13.6	AD	
CO	MT	109	12.6	AD	Recapture
CO	MT	109	13.4	AD	
CO	MT	109	13.3	AD	
CO	MT	110	12.6	AD	
CO	MT	110	13.3	AD	
CO	MT	110	13	AD	Recapture

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	110	12.7	AD	
CO	MT	110	13.5	AD	
CO	MT	110	12.6	AD	
CO	MT	110	13.6	AD	
CO	MT	110	13.8	AD	
CO	MT	110	13.9	AD	Recapture
CO	MT	110	12.4	AD	
CO	MT	110	12.4	AD	Recapture
CO	MT	110	13	AD	
CO	MT	110	13.2	AD	
CO	MT	111	14.1	AD	
CO	MT	111	13.5	AD	
CO	MT	111	14.8	AD	
CO	MT	111	13.3	AD	
CO	MT	111	13.2	AD	
CO	MT	111	12.5	AD	
CO	MT	111	14.3	AD	Recapture
CO	MT	111	14.1	AD	
CO	MT	111	13.7	AD	
CO	MT	111	14.3	AD	
CO	MT	111	13.2	AD	
CO	MT	111	14.2	AD	
CO	MT	111	13.7	AD	
CO	MT	111	14.9	AD	
CO	MT	111	14.1	AD	
CO	MT	111	14	AD	
CO	MT	111	13.2	AD	
CO	MT	111	13.2	AD	
CO	MT	111	13.8	AD	
CO	MT	111	13.6	AD	
CO	MT	112	13.2	AD	
CO	MT	112	13.7	AD	
CO	MT	112	13.6	AD	
CO	MT	112	14	AD	
CO	MT	112	13.5	AD	
CO	MT	113	13.2	AD	
CO	MT	113	14.1	AD	Recapture
CO	MT	113	13.9	AD	
CO	MT	113	13.8	AD	
CO	MT	113	14.7	AD	
CO	MT	114	15	AD	Scales taken 51399-22
CO	MT	114	13.6	AD	
CO	MT	115	16.2	AD	Scales taken 51399-21
CO	MT	115	14.8	AD	
CO	MT	115	14.8	AD	
CO	MT	115	14.9	AD	
CO	MT	115	14.6	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	115	14	AD	
CO	MT	115	14.3	AD	
CO	MT	116	15.1	AD	Recapture
CO	MT	116	14.6	AD	
CO	MT	116	15.4	AD	Scales taken 51399-23
CO	MT	116	16	AD	Scales taken 51399-27
CO	MT	117	16.3	AD	Scales taken 51399-24
CO	MT	118	16.4	AD	Scales taken 51399-25
CO	MT	118		AD	Scales taken 51399-26
CO	MT	105	11.1	AD/RM	
CO	MT	109	12.7	AD/RM	
CO	MT	110	12.2	AD/RM	
CO	MT	112	13.2	AD/RM	
CO	MT	112	13.7	AD/RM	
CO	MT	114	14.4	AD/RM	
CO	MT	115	15	AD/RM	
CO	MT	115	15	AD/RM	Recapture
CO	MT	116	15.1	AD/RM	
CO	MT	116	16.1	AD/RM	
CO	MT	116	15.8	AD/RM	
CO	MT	117	14.8	AD/RM	
CO	MT	119	15.2	AD/RM	
CO	MT	120	16.4	AD/RM	
CO	MT	120	16.1	AD/RM	
CO	MT	120	15.1	AD/RM	
CO	MT	121	17.2	AD/RM	
CO	MT	122	17.8	AD/RM	
CO	MT	124	15.5	AD/RM	
CO	MT	124	17.7	AD/RM	Recapture
CO	MT	129	22.7	AD/RM	
CO	MT	131	22.1	AD/RM	
CO	MT	102	10.3	RV	
CO	MT	105	11.2	RV	
CO	MT	106	12.1	RV	
CO	MT	109	13	RV	
CO	MT	111	13.4	RV	
CO	MT	114	14.1	RV	
CO	AD	116	14.8	RV	
CO	MT	116	16.3	RV	
CO	MT	105	11.2	UM	
RBT	IM	61	2.1	UM	
RBT	IM	67	3.2	UM	
RBT	IM	68	3.2	UM	
RBT	IM	71	3.6	UM	
RBT	IM	74	4.1	UM	
RBT	IM	75	4.1	UM	
RBT	IM	76	4.3	UM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
RBT	IM	76	4.9	UM	
RBT	IM	94	8.7	UM	
RBT	IM	94	8.3	UM	
RBT	IM	96	9.7	UM	
RBT	IM	104	11.6	UM	
RBT	IM	105	14.3	UM	
RBT	IM	109	13.1	UM	
RBT	IM	110	14.2	UM	
RBT	IM	112	15.3	UM	
RBT	IM	115	15.1	UM	
RBT	IM	116	15.7	UM	
RBT	IM	116	15.6	UM	
RBT	IM	117	18	UM	
RBT	IM	119	18.3	UM	
RBT	IM	121	19.6	UM	
RBT	IM	122	18.6	UM	
RBT	IM	122	18.8	UM	
RBT	IM	124	18.8	UM	
RBT	IM	125	19.2	UM	
RBT	IM	126	20.4	UM	
RBT	IM	126	23.8	UM	
RBT	IM	135	22.9	UM	
RBT	MT	136	27.7	UM	
RBT	MT	140	26.4	UM	
RBT	MT	152	33.5	UM	
RBT	MT	161	39.6	UM	
RBT	MT	165	42.4	UM	

DAY : 27 **SAMPLE DATE :** June 24/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	96	9.2	AD	
CO	MT	96	9.3	AD	
CO	MT	99	10.1	AD	
CO	MT	99	10.1	AD	
CO	MT	99	9.6	AD	
CO	MT	100	10.5	AD	
CO	MT	101	10.4	AD	
CO	MT	101	9.7	AD	
CO	MT	101	10.2	AD	
CO	MT	101	10.1	AD	
CO	MT	101	11	AD	
CO	MT	102	10.5	AD	
CO	MT	102	9.7	AD	
CO	MT	102	10.1	AD	
CO	MT	102	10.6	AD	
CO	MT	102	11.2	AD	
CO	MT	102	10.4	AD	
CO	MT	103	11.3	AD	
CO	MT	103	11.4	AD	
CO	MT	103	11.3	AD	
CO	MT	103	11.3	AD	
CO	MT	104	11.1	AD	
CO	MT	104	11.3	AD	
CO	MT	104	11.7	AD	
CO	MT	104	10.4	AD	
CO	MT	104	11.5	AD	
CO	MT	104	10.9	AD	
CO	MT	104	11.5	AD	
CO	MT	104	11.3	AD	
CO	MT	104	10.4	AD	
CO	MT	104	11.3	AD	
CO	MT	104	11.5	AD	
CO	MT	104	11	AD	
CO	MT	104	11.5	AD	
CO	MT	104	11	AD	
CO	MT	104	11	AD	
CO	MT	105	11.8	AD	
CO	MT	105	12.1	AD	
CO	MT	105	12.4	AD	
CO	MT	105	10.8	AD	
CO	MT	105	12	AD	
CO	MT	105	11.7	AD	
CO	MT	105	12.1	AD	
CO	MT	105	12.1	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.2	AD	
CO	MT	105	11.6	AD	

Species	Stage IM/MT/A	Length In MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	105	12.2	AD	
CO	MT	105	11.2	AD	
CO	MT	105	12.5	AD	
CO	MT	105	11.6	AD	
CO	MT	105	11.9	AD	
CO	MT	105	11.2	AD	
CO	MT	105	11.8	AD	
CO	MT	105	11.8	AD	
CO	MT	105	10.7	AD	
CO	MT	105	11.8	AD	
CO	MT	105	12.5	AD	
CO	MT	105	11.6	AD	
CO	MT	105	12	AD	
CO	MT	105	11.7	AD	
CO	MT	105	12.2	AD	
CO	MT	105	12.6	AD	
CO	MT	105	10.7	AD	
CO	MT	105	12	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.8	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.7	AD	
CO	MT	106	11.7	AD	
CO	MT	106	12.4	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.3	AD	
CO	MT	106	11.1	AD	
CO	MT	106	12.5	AD	
CO	MT	106	11.8	AD	
CO	MT	106	13.1	AD	
CO	MT	106	12	AD	
CO	MT	106	12.7	AD	
CO	MT	106	12.3	AD	
CO	MT	107	12.3	AD	
CO	MT	107	12.4	AD	
CO	MT	107	13.8	AD	
CO	MT	107	12.9	AD	
CO	MT	107	13.1	AD	
CO	MT	107	12.5	AD	
CO	MT	107	12.6	AD	
CO	MT	107	12.3	AD	
CO	MT	107	12.8	AD	
CO	MT	107	12.5	AD	
CO	MT	107	11.9	AD	
CO	MT	107	12	AD	
CO	MT	107	13.1	AD	
CO	MT	108	12.6	AD	
CO	MT	108	12.4	AD	
CO	MT	108	12.7	AD	
CO	MT	108	13.5	AD	
CO	MT	108	12.7	AD	
CO	MT	108	13	AD	
CO	MT	108	12.9	AD	
CO	MT	109	12.4	AD	
CO	MT	109	13.1	AD	
CO	MT	109	13.3	AD	
CO	MT	109	12.4	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	109	12.5	AD	
CO	MT	109	12.6	AD	
CO	MT	109	13.3	AD	
CO	MT	109	13.7	AD	
CO	MT	109	13.3	AD	
CO	MT	110	13.7	AD	
CO	MT	110	13.1	AD	Recapture
CO	MT	110	12.7	AD	
CO	MT	110	13	AD	
CO	MT	110	13.4	AD	
CO	MT	110	14.1	AD	
CO	MT	110	12.6	AD	
CO	MT	110	15.1	AD	Scales taken 51399-30
CO	MT	110	13.2	AD	
CO	MT	110	12.9	AD	
CO	MT	110	13	AD	
CO	MT	110	12.7	AD	
CO	MT	110	13.9	AD	
CO	MT	110	12.2	AD	
CO	MT	110	13.6	AD	
CO	MT	110	12.9	AD	
CO	MT	110	13.7	AD	
CO	MT	110	13.4	AD	
CO	MT	110	12.6	AD	
CO	MT	111	14.2	AD	
CO	MT	111	13.4	AD	
CO	MT	111	14.8	AD	
CO	MT	111	13.6	AD	
CO	MT	111	13.6	AD	
CO	MT	111	13.6	AD	
CO	MT	111	14	AD	
CO	MT	111	12.8	AD	
CO	MT	112	13.6	AD	
CO	MT	112	14.6	AD	
CO	MT	112	13.7	AD	
CO	MT	112	14.6	AD	
CO	MT	112	14.1	AD	
CO	MT	112	14	AD	
CO	MT	112	13.4	AD	
CO	MT	112	14.2	AD	
CO	MT	112	15.8	AD	Scales taken 51399-32
CO	MT	112	14	AD	
CO	MT	113	14.3	AD	
CO	MT	113	14.9	AD	
CO	MT	113	14.5	AD	
CO	MT	114	14.9	AD	
CO	MT	114	14.5	AD	
CO	MT	114	14.4	AD	
CO	MT	114	14.9	AD	
CO	MT	115	14.5	AD	
CO	MT	115	15.9	AD	Scales taken 51399-28
CO	MT	115	15.7	AD	Scales taken 51399-29
CO	MT	115	16	AD	Scales taken 51399-33
CO	MT	116	17.9	AD	Scales taken 51399-31
CO	MT	116	15.4	AD	Scales taken 51399-34
CO	MT	110	14.7	AD/RM	
CO	MT	111	14.3	AD/RM	
CO	MT	111	12.5	AD/RM	
CO	MT	115	18.2	AD/RM	
CO	MT	115	14.7	AD/RM	
CO	MT	115	15.1	AD/RM	
CO	MT	116	14.8	AD/RM	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	119	18.2	AD/RM	
CO	MT	120	16.1	AD/RM	
CO	MT	120	17.6	AD/RM	
CO	MT	120	15.5	AD/RM	
CO	MT	121	17.4	AD/RM	
CO	MT	121	17.9	AD/RM	
CO	MT	121	17	AD/RM	
CO	MT	122	18.5	AD/RM	
CO	MT	123	18.2	AD/RM	
CO	MT	125	18.7	AD/RM	
CO	MT	101	10.5	RV	
CO	MT	102	10.8	RV	
CO	MT	108	13.8	RV	
CO	MT	109	13	RV	
CO	MT	110	13	RV	
CO	MT	112	12.7	RV	
CO	MT	115	14	RV	
CO	MT	117	15.5	RV	
CO	MT	123	17.1	RV	
Lamprey					37 lamprey captured
RBT	IM	65	2.8	UM	Scales taken 51396-34
RBT	IM	67	2.8	UM	Scales taken 51396-27
RBT	IM	69	3.1	UM	Scales taken 51396-32
RBT	IM	75	4.7	UM	Scales taken 51396-28
RBT	IM	76	4.8	UM	Scales taken 51396-25
RBT	IM	76	4.1	UM	Scales taken 51396-26
RBT	IM	82	5.7	UM	Scales taken 51396-36
RBT	IM	86	6.5	UM	Scales taken 51396-35
RBT	IM	100	9.5	UM	Scales taken 51396-19
RBT	IM	100	10.5	UM	Scales taken 51396-21
RBT	IM	102	9.9	UM	Scales taken 51396-37
RBT	IM	108	12.1	UM	
RBT	IM	109	12.8	UM	Scales taken 51396-31
RBT	IM	115	15.9	UM	Scales taken 51396-30
RBT	IM	121	20.5	UM	Scales taken 51396-20
RBT	IM	122	17.7	UM	Scales taken 51396-29
RBT	IM	126	20.1	UM	
RBT	MT	131	23	UM	Scales taken 51396-23
RBT	MT	133	24	UM	Scales taken 51396-22
RBT	MT	133	24.5	UM	
RBT	IM	138	26.1	UM	Scales taken 51396-33
RBT	MT	140	28.3	UM	Scales taken 51396-24
RBT	MT	145	39	UM	
RBT	MT	149	28.7	UM	Scales taken 51396-38

DAY : 28 **SAMPLE DATE :** June 25/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CH	MT	114	16.2	UM	
CO	MT	96	9.6	AD	
CO	MT	97	9.5	AD	
CO	MT	99	10	AD	
CO	MT	99	9.7	AD	
CO	MT	99	9.7	AD	
CO	MT	99	10.1	AD	
CO	MT	100	10.2	AD	
CO	MT	100	10.6	AD	
CO	MT	101	10.6	AD	
CO	MT	101	10.8	AD	
CO	MT	101	10.9	AD	
CO	MT	102	10.6	AD	
CO	MT	102	10.4	AD	
CO	MT	102	10.8	AD	
CO	MT	102	10.9	AD	
CO	MT	103	10.8	AD	
CO	MT	103	11.6	AD	
CO	MT	103	11.7	AD	
CO	MT	104	11.2	AD	
CO	MT	104	11.5	AD	
CO	MT	104	11.6	AD	
CO	MT	104	11.3	AD	
CO	MT	104	12	AD	
CO	MT	105	12.3	AD	
CO	MT	105	11.5	AD	
CO	MT	105	12.1	AD	
CO	MT	105	12	AD	
CO	MT	105	11.6	AD	
CO	MT	105	11.5	AD	
CO	MT	105	11.4	AD	
CO	MT	105	10.9	AD	
CO	MT	105	12.3	AD	
CO	MT	105	12.7	AD	
CO	MT	106	11.5	AD	
CO	MT	106	11.8	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.8	AD	
CO	MT	106	11.3	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.2	AD	
CO	MT	106	13.4	AD	
CO	MT	106	12.7	AD	
CO	MT	106	12	AD	
CO	MT	106	12	AD	
CO	MT	107	12.8	AD	
CO	MT	107	12.6	AD	
CO	MT	107	12.6	AD	
CO	MT	107	11.6	AD	
CO	MT	107	12.5	AD	
CO	MT	107	12.1	AD	
CO	MT	107	12.5	AD	
CO	MT	107	11.9	AD	
CO	MT	108	13.1	AD	
CO	MT	108	12.6	AD	
CO	MT	108	12.1	AD	
CO	MT	108	13.1	AD	
CO	MT	109	13.2	AD	
CO	MT	109	13.9	AD	
CO	MT	109	13.2	AD	
CO	MT	109	12.9	AD	
CO	MT	109	13.9	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	109	13	AD	
CO	MT	110	13.2	AD	
CO	MT	110	13.6	AD	
CO	MT	110	12.5	AD	
CO	MT	110	13.4	AD	
CO	MT	110	14.3	AD	
CO	MT	110	13.1	AD	
CO	MT	110	13.2	AD	
CO	MT	111	14.1	AD	
CO	MT	111	13.2	AD	
CO	MT	111	14.1	AD	
CO	MT	111	13.6	AD	
CO	MT	111	14	AD	
CO	MT	111	12.8	AD	
CO	MT	111	12.8	AD	
CO	MT	112	14.4	AD	
CO	MT	112	13.7	AD	
CO	MT	112	14.9	AD	
CO	MT	112	14	AD	
CO	MT	112	13.8	AD	
CO	MT	112	14.2	AD	
CO	MT	112	14.3	AD	
CO	MT	112	13.9	AD	
CO	MT	113	14.5	AD	
CO	MT	113	13.6	AD	
CO	MT	114	15.6	AD	Scales taken 51399-36
CO	MT	114	14.5	AD	
CO	MT	114	14.7	AD	
CO	MT	114	14.8	AD	
CO	MT	115	15.3	AD	Scales taken 51399-37
CO	MT	118	16.4	AD	Scales taken 51399-35
CO	MT	109	12	AD/RM	
CO	MT	112	13.8	AD/RM	
CO	MT	115	14.6	AD/RM	
CO	MT	115	13.5	AD/RM	
CO	MT	118	16.2	AD/RM	
CO	MT	120	18	AD/RM	
CO	MT	121	18.1	AD/RM	
CO	MT	123	19.9	AD/RM	
CO	MT	107	11.9	RV	
CO	MT	111	13	RV	
CO	MT	112	13.3	RV	
LNC	MT	76	4.5	UM	
RBT	IM	70	3.5	UM	Scales taken 51396-40
RBT	IM	72	3.7	UM	Scales taken 51396-39
RBT	IM	81	5.8	UM	Scales taken 51396-48
RBT	IM	100	9	UM	Scales taken 51396-41
RBT	IM	101	11.1	UM	Scales taken 51396-47
RBT	IM	106	12.4	UM	
RBT	IM	112	14.6	UM	
RBT	IM	114	14.5	UM	Scales taken 51396-49
RBT	IM	115	15	UM	Scales taken 51396-42
RBT	IM	116	15.3	UM	Scales taken 51396-46
RBT	IM	117	16.4	UM	Scales taken 51396-43
RBT	IM	122	18.9	UM	
RBT	MT	132	21.6	UM	
RBT	MT	133	24.4	UM	
RBT	MT	136	29.6	UM	
RBT	MT	137	25.6	UM	Scales taken 51396-44
RBT	MT	139	28.3	UM	
RBT	MT	148	31.6	UM	Scales taken 51396-45
RBT	MT	160	41.2	UM	
WHS	IM	112	16.7	UM	

DAY : 29 **SAMPLE DATE :** June 26/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	95	8.3	AD	
CO	MT	96	9.4	AD	
CO	MT	99	10.3	AD	
CO	MT	100	10.9	AD	
CO	MT	100	10.1	AD	
CO	MT	100	10	AD	
CO	MT	100	10.3	AD	
CO	MT	101	10.6	AD	
CO	MT	102	10.5	AD	
CO	MT	102	11.2	AD	
CO	MT	103	10.5	AD	
CO	MT	103	10.4	AD	
CO	MT	103	10.7	AD	
CO	MT	104	11.7	AD	
CO	MT	104	10.7	AD	
CO	MT	105	11	AD	
CO	MT	105	11	AD	
CO	MT	105	12.3	AD	
CO	MT	106	12.3	AD	
CO	MT	106	12.7	AD	
CO	MT	106	11.9	AD	
CO	MT	106	12	AD	
CO	MT	106	12	AD	
CO	MT	106	11.1	AD	
CO	MT	106	11.5	AD	
CO	MT	106	12.1	AD	
CO	MT	106	12	AD	
CO	MT	107	12	AD	
CO	MT	107	12.6	AD	
CO	MT	107	12.1	AD	
CO	MT	107	11.7	AD	
CO	MT	107	11.6	AD	
CO	MT	108	13.2	AD	
CO	MT	108	12.1	AD	
CO	MT	108	12.9	AD	
CO	MT	108	12.6	AD	
CO	MT	108	12.8	AD	
CO	MT	109	14.6	AD	
CO	MT	109	12.8	AD	
CO	MT	109	12.6	AD	
CO	MT	109	13.4	AD	
CO	MT	109	14.2	AD	
CO	MT	109	13	AD	
CO	MT	109	12.8	AD	
CO	MT	109	13.4	AD	
CO	MT	109	13.1	AD	
CO	MT	109	13.1	AD	
CO	MT	110	12.9	AD	

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	110	12.7	AD	
CO	MT	110	13.3	AD	
CO	MT	110	14.6	AD	
CO	MT	110	13.5	AD	
CO	MT	110	13.3	AD	
CO	MT	110	13.9	AD	
CO	MT	111	12.1	AD	
CO	MT	111	14.6	AD	
CO	MT	111	13.5	AD	
CO	MT	111	13.8	AD	
CO	MT	111	13.4	AD	
CO	MT	111	13.4	AD	
CO	MT	111	13.8	AD	
CO	MT	111	14.1	AD	
CO	MT	112	14.5	AD	
CO	MT	112	13.9	AD	
CO	MT	112	13.6	AD	
CO	MT	112	14.3	AD	
CO	MT	112	14.7	AD	
CO	MT	113	14.4	AD	
CO	MT	114	15.5	AD	Scales taken 51399-41
CO	MT	114	14.7	AD	
CO	MT	114	14.2	AD	
CO	MT	114	15.5	AD	Scales taken 51399-43
CO	MT	115	14.4	AD	
CO	MT	115	15.2	AD	Scales taken 51399-42
CO	MT	116	14.9	AD	
CO	MT	117	16.4	AD	
CO	MT	119	17.5	AD	Scales taken 51399-40
CO	MT	120	16.7	AD	Scales taken 51399-39
CO	MT	109	13	AD/RM	
CO	MT	111	15	AD/RM	
CO	MT	114	14.6	AD/RM	
CO	MT	115	15.4	RV	
CO	MT	116	14.9	RV	
CO	MT	120	16.7	RV	
CO	IM	52	1.5	UM	
LNC	MT	73	3.8	UM	
RBT	IM	70	3.1	UM	Scales taken 51396-50
RBT	IM	109	13.3	UM	
RBT	IM	110	13.3	UM	
RBT	IM	110	13.3	UM	
RBT	IM	111	13.8	UM	
RBT	IM	115	16.1	UM	
RBT	IM	115	16.2	UM	
RBT	IM	116	15.7	UM	
RBT	IM	118	16.6	UM	
RBT	IM	120	19.1	UM	
RBT	IM	126	20.8	UM	
RBT	IM	126	20.5	UM	
RBT	IM	126	20.4	UM	
RBT	IM	130	21.1	UM	
RBT	MT	131	21	UM	
RBT	IM	132	22.9	UM	
RBT	MT	135	23.7	UM	
RBT	MT	138	28	UM	
RBT	MT	144	32.1	UM	

DAY : 30 **SAMPLE DATE :** June 27/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM	General Comments
CO	MT	102	10.8	AD	
CO	MT	103	10.8	AD	
CO	MT	104	12.2	AD	
CO	MT	104	11.7	AD	
CO	MT	105	11.4	AD	
CO	MT	105	11.7	AD	
CO	MT	105	11.7	AD	
CO	MT	106	11.9	AD	
CO	MT	106	12.3	AD	
CO	MT	106	11	AD	
CO	MT	106	12.8	AD	
CO	MT	107	12.5	AD	
CO	MT	107	11.7	AD	
CO	MT	107	12.9	AD	
CO	MT	107	12.7	AD	
CO	MT	108	12	AD	
CO	MT	108	12.7	AD	
CO	MT	108	13.6	AD	
CO	MT	109	13.1	AD	
CO	MT	109	13.2	AD	
CO	MT	109	13.1	AD	
CO	MT	109	14.3	AD	
CO	MT	109	13.7	AD	
CO	MT	109	12.7	AD	
CO	MT	110	12.8	AD	
CO	MT	110	14.3	AD	
CO	MT	110	13.1	AD	
CO	MT	111	13.2	AD	
CO	MT	111	13.3	AD	
CO	MT	111	13.6	AD	
CO	MT	111	13	AD	
CO	MT	111	14.6	AD	
CO	MT	112	14.6	AD	
CO	MT	113	14	AD	
CO	MT	113	15.3	AD	Scales taken 51399-49
CO	MT	114	15.1	AD	Scales taken 51399-45
CO	MT	114	15.3	AD	Scales taken 51399-47
CO	MT	114	14.4	AD	
CO	MT	115	15.5	AD	Scales taken 51399-46
CO	MT	115	16.2	AD	Scales taken 51399-48
CO	MT	115	17.3	AD	Scales taken 51399-50
CO	MT	116	15.6	AD	Scales taken 51399-44
CO	MT	112	15.3	AD/RM	
CO	MT	115	15.2	AD/RM	
CO	MT	115	15.2	AD/RM	
CO	MT	118	17	AD/RM	
CO	MT	115	14.4	RV	
Lamprey					8 lamprey captured
RBT	IM	65	2.9	UM	
RBT	IM	86	6	UM	Scales taken 51397-01
RBT	MT	134	23.3	UM	
RBT	MT	135	24.4	UM	

DAY : 31 **SAMPLE DATE :** June 28/00

IM = immature MT = mature (smolt) A = Adult

Ad = adipose clip RM = right max. clip RV = right ventral clip UM = unmarked

Species	Stage IM/MT/A	Length in MM	Weight in Grams	Mark Type Ad/ADRM/	General Comments
CO	MT	98	9.8	AD	
CO	MT	101	10.9	AD	
CO	MT	103	11.5	AD	
CO	MT	104	12.7	AD	
CO	MT	104	11.5	AD	
CO	MT	106	12	AD	
CO	MT	106	12.4	AD	
CO	MT	106	12.2	AD	
CO	MT	108	13	AD	
CO	MT	108	13.7	AD	
CO	MT	109	12.8	AD	
CO	MT	109	13.7	AD	
CO	MT	110	13.3	AD	
CO	MT	110	14	AD	
CO	MT	111	13.7	AD	
CO	MT	111	13.2	AD	
CO	MT	111	14.4	AD	
CO	MT	114	15.3	AD	
CO	IM	53	1.6	UM	
Lamprey					6 lamprey captured
RBT	IM	63	2.5	UM	
RBT	MT	226	113.8	UM	Scales taken 51397-02
WHS	IM	136	25.8	UM	

Appendix 3. Data collected to estimate trap efficiency during the Buck Creek Juvenile Salmon Trapping Project, May and June 2000

BUCK CR. JUVENILE TRAPPING PROGRAM 2000

TRAP EFFICIENCY TESTING RECORD

DAY : 10 **MARKING DATE :** June 5-6

No. Coho < 100 mm marked 3 **Total No. Clipped** 89

No. Coho > 100 mm marked 86

Mark type : Top caudal clip

Release Date : June 6/00 **Release Location :** 300 M. u/s of RST

Recapture Information

Date	No. Recaptured
07-Jun	5
08-Jun	1
09-Jun	2
10-Jun	2
11-Jun	0
12-Jun	0
13-Jun	0

Total number recaptured 10

Trap Efficiency Rate 0.11236
(No. recaps/total marked)

Duration of recapture 7 days

General Comments

Staff gauge at 53 cms.
Water temp is at 11 degrees C.
Air temp is at 14 degrees C.
No morts.
Release time 20:00 hrs.

BUCK CR. JUVENILE TRAPPING PROGRAM 2000

TRAP EFFICIENCY TESTING RECORD

DAY : 18 **MARKING DATE :** 15-Jun

No. Coho < 100 mm marked 28 **Total No. Clipped** 126

No. Coho > 100 mm marked 98

Mark type : bottom caudal clip

Release Date : June 15/00 **Release Location :** 300 M. u/s of RST

Recapture Information

Date	No. Recaptured
16-Jun	21
17-Jun	1
18-Jun	0
19-Jun	0
20-Jun	0
21-Jun	0
22-Jun	0
Total	22

Total number recaptured 22

Trap Efficiency Rate 0.174603
(No. recaps/total marked)

Duration of recapture 7 days

General Comments

The recaptured fish were all caught in the first two days.
Clipped fish were released on June 15/00 at 19:10 hrs.
Fish were released about 300 m. upstream of the RST at hydro pole #139

BUCK CR. JUVENILE TRAPPING PROGRAM 2000

TRAP EFFICIENCY TESTING RECORD

DAY : 26 **MARKING DATE :** June 22/00

No. Coho < 100 mm marked 0 **Total No. Clipped** 198

No. Coho > 100 mm marked 198

Mark type : Top caudal

Release Date : June 22/00 **Release Location :** 300 M. u/s of RST

Recapture Information

Date	No. Recaptured
23-Jun	20
24-Jun	0
25-Jun	0
26-Jun	0
27-Jun	0
28-Jun	0
Total	20

Total number recaptured 20

Trap Efficiency Rate 0.10101
(No. recaps/total marked)

Duration of recapture 6 days

General Comments